N60478.AR.001419
NWS EARLE
5090.3a

TANK CLOSURE PLAN NWS EARLE NJ
2/1/1994
ROY F. WESTON, INC.

000000301

TANK CLOSURE PLAN FOR
THE NAVAL WEAPONS STATIONS EARLE
COLTS NECK, NEW JERSEY

W.O. No. 10240-001-001-0001

Prepared for:

THE UNITED STATES NAVY
Naval Weapons Station Earle
Colt Neck, New Jersey 07722

February 1994

DCN: NWSE-0294-0077

George Weiss
NJDEPE UST Registration # 0002112

Richard M. Leuser, P.E.
NJDEPE UST Registration # 23275
NJ Registered Professional Engineer #23275

Prepared by:

ROY F. WESTON, INC.
One Weston Way
West Chester, PA 19380

TANK CLOSURE PLAN FOR THE NAVAL WEAPONS STATIONS EARLE COLTS NECK, NEW JERSEY

W.O. No. 10240-001-001-0001

Prepared for:

THE UNITED STATES NAVY
Naval Weapons Station Earle
Colt Neck, New Jersey 07722

February 1994

DCN: NWSE-0294-0077

George Weiss
NJDEPE UST Registration # 0002112

Richard M. Leuser, P.E.
NJDEPE UST Registration # 23275
NJ Registered Professional Engineer #23275

Prepared by:

ROY F. WESTON, INC.
One Weston Way
West Chester, PA 19380

TABLE OF CONTENTS

SECTION 1.0

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

LIST OF TABLES

SECTION 1.0

1.1 INTRODUCTION

On behalf of the United States Navy, Roy F. Weston, Inc. (WESTON®) has prepared the following tank Closure Plan for the removal of the underground storage tank (UST) located near Building C3/1 at Naval Weapons Station Earle (NWS-Earle) in Colts Neck, New Jersey. Removal operations will be conducted in accordance with New Jersey regulations promulgated as N.J.A.C. 7:14B-1 et.seq. and N.J.A.C. 7:26E et.seq. (Technical Requirements for Site Remediation).

1.2 PROPERTY DESCRIPTION AND SITE HISTORY

The main section of NWS-Earle is located in Colts Neck, New Jersey and encompasses an area of approximately 9 square miles. This will be referred to as the Inland Area (Figure 1-1). A portion of NWS-Earle is located adjacent to Leonardo, New Jersey. This will be referred to as the Waterfront Area (Figure 1-2). Both locations of NWS-Earle are in Monmouth County and are connected by a government road approximately 13 miles in length. The tank addressed in this plan is located in the Inland Area facility. Both the Waterfront and Inland facilities are currently in operation.

1.3 UNDERGROUND STORAGE TANKS

The scope of work proposed for the NWS-Earle facility, involves the removal and closure of the following USTs located adjacent to the listed buildings.

1.3.1 Building C3/1

The tank site is shown in Figure 1-4. The age of this tank is unknown. It has a capacity of 10,000 gallons and was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.2 Building C3/2

The tank site is shown in Figure 1-5. The age of this tank is unknown. It has a capacity of 10,000 gallons and was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.3 Building C16

The tank site is shown in Figure 1-6. This tank is 27 years old. It has a capacity of 15,000 gallons and was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.4 Building C21

The tank site is shown in Figure 1-7. This tank is 15 years old. It has a capacity of 2,000 gallons and was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.5 Building C31

The tank site is shown in Figure 1-8. This tank is 25 years old. It has a capacity of 15,000 gallons and was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.6 Building R2

The tank site is shown in Figure 1-9. This tank is 23 years old and has a capacity of 5,000 gallons. It was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.7 Building R5

The tank site is shown in Figure 1-10. This tank is 33 years old and has a capacity of 1,000 gallons. It was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.8 Building R10

The tank site is shown in Figure 1-11. This tank is 28 years old and has a capacity of 5,000 gallons. It was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.9 Building R15/1

The tank site is shown in Figure 1-12. This tank is 12 years old and has a capacity of 3,000 gallons. It was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.10 Building R15/2

The tank site is shown in Figure 1-13. This tank is 12 years old and has a capacity of 3,000 gallons. It was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.11 Building R22

The tank site is shown in Figure 1-14. The age of this tank is not known. It has a capacity of 15,000 gallons and was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.12 Building C4

The tank site is shown in Figure 1-15. This tank is 27 years old and has a capacity of 5,000 gallons. It was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.13 Building C9

The tank site is shown in Figure 1-16. This tank is 27 years old and has a capacity of 15,000 gallons. It was constructed of coated steel. The tank was last known to contain No. 2 Fuel Oil.

1.3.14 Building 500

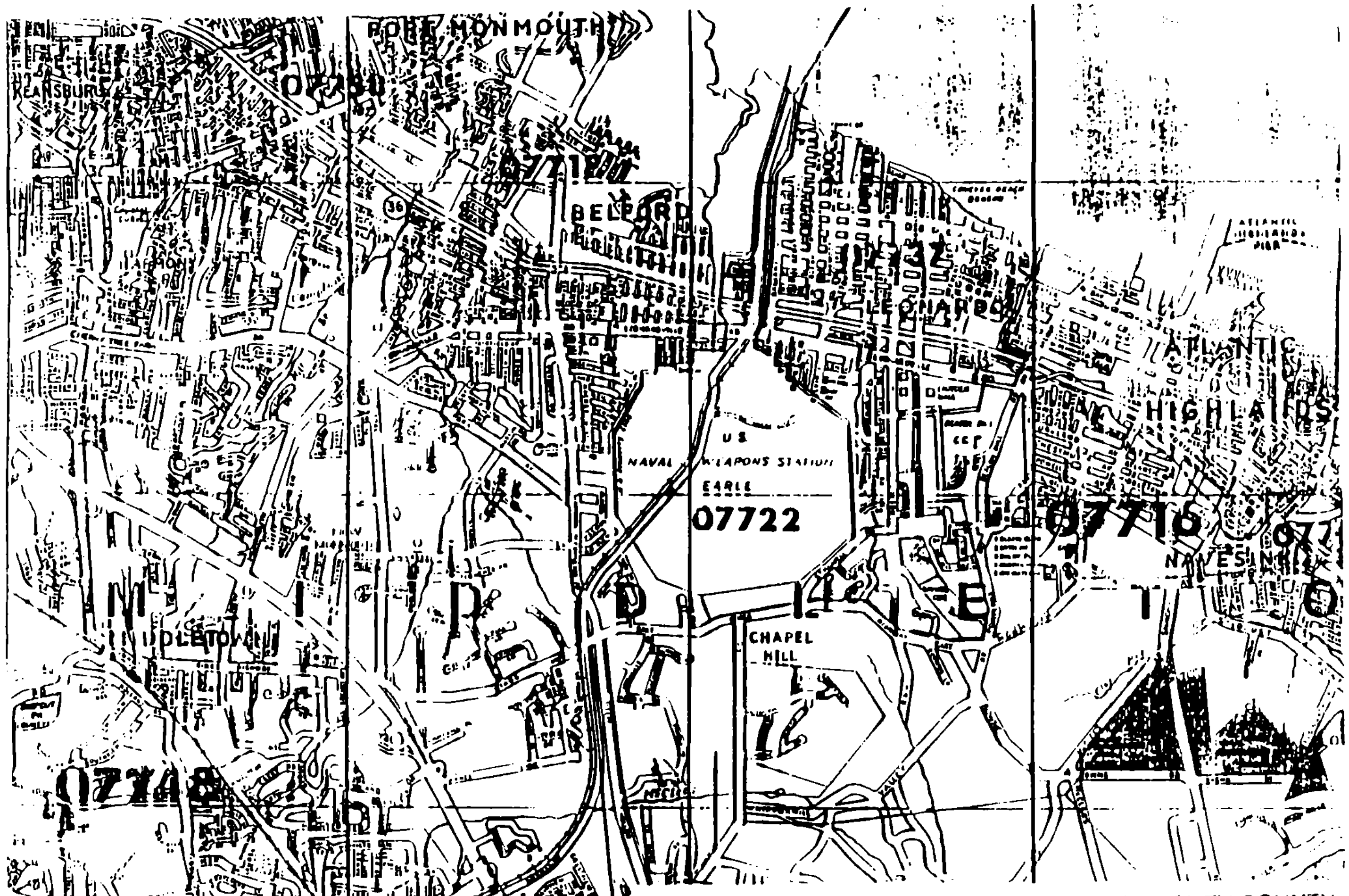
The tank site is shown in Figure 1-17. This tank is 23 years old and has a capacity of 10,000 gallons. The material of construction is not known for this tank. The tank was last known to contain No. 2 Fuel Oil.

WESTON

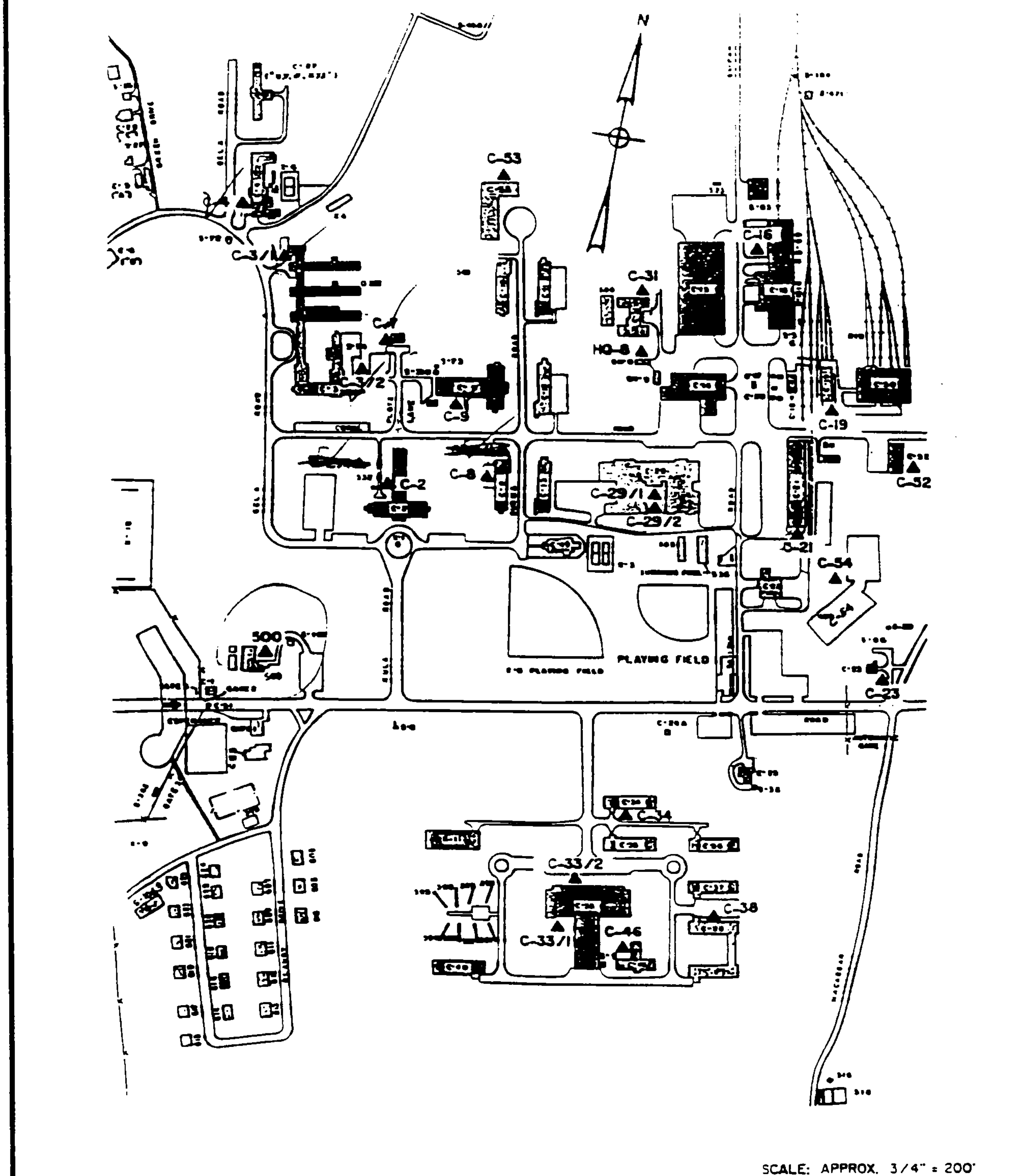
GENERAL AREA MAP

FIGURE 1-1

N. W. S. EARLE
COLTS NECK, N. J.



TAKEN FROM HAGSTROM MAP OF MONMOUTH COUNTY

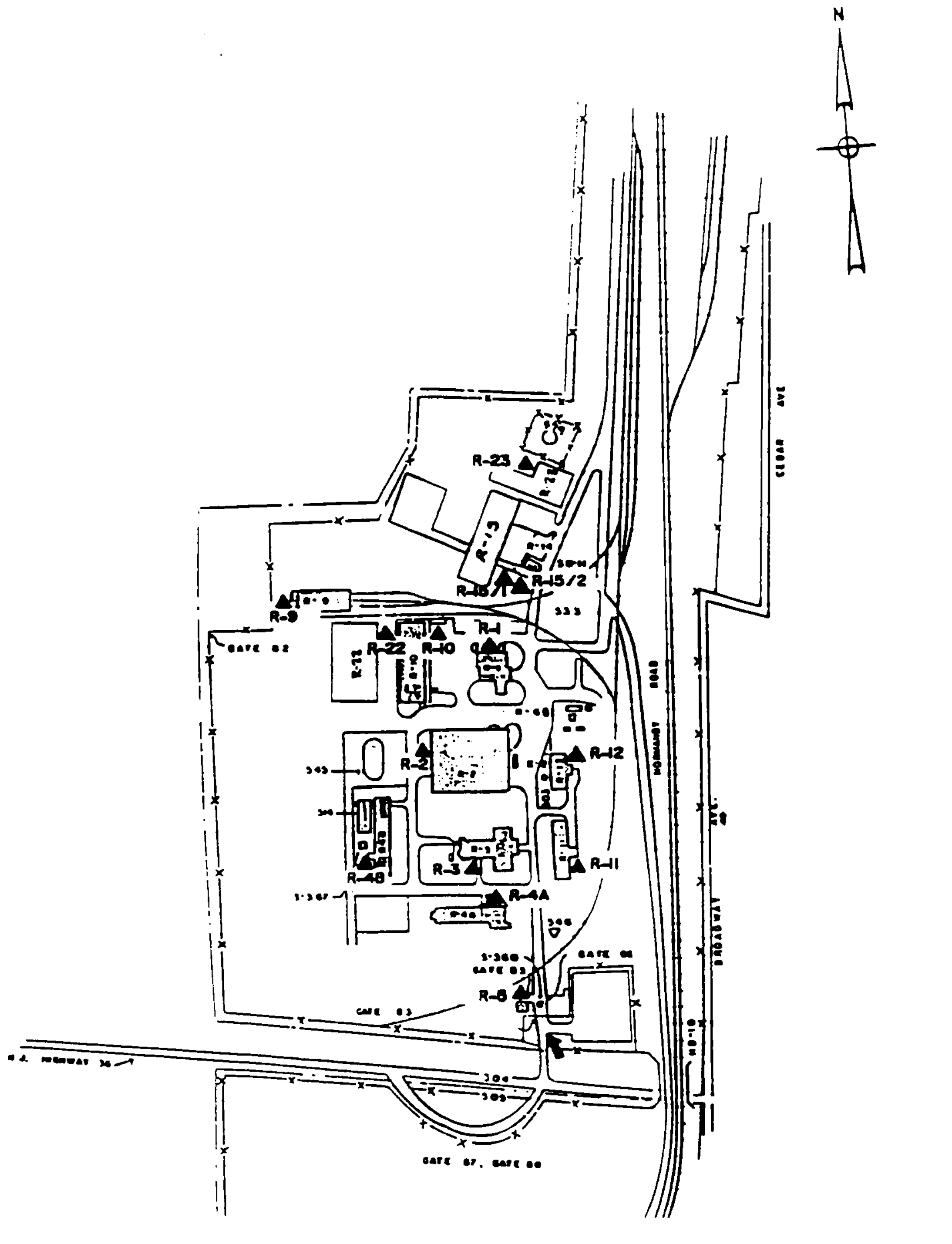


WESTON
MANAGERS DESIGNERS/CONSULTANTS

INLAND AREA MAP

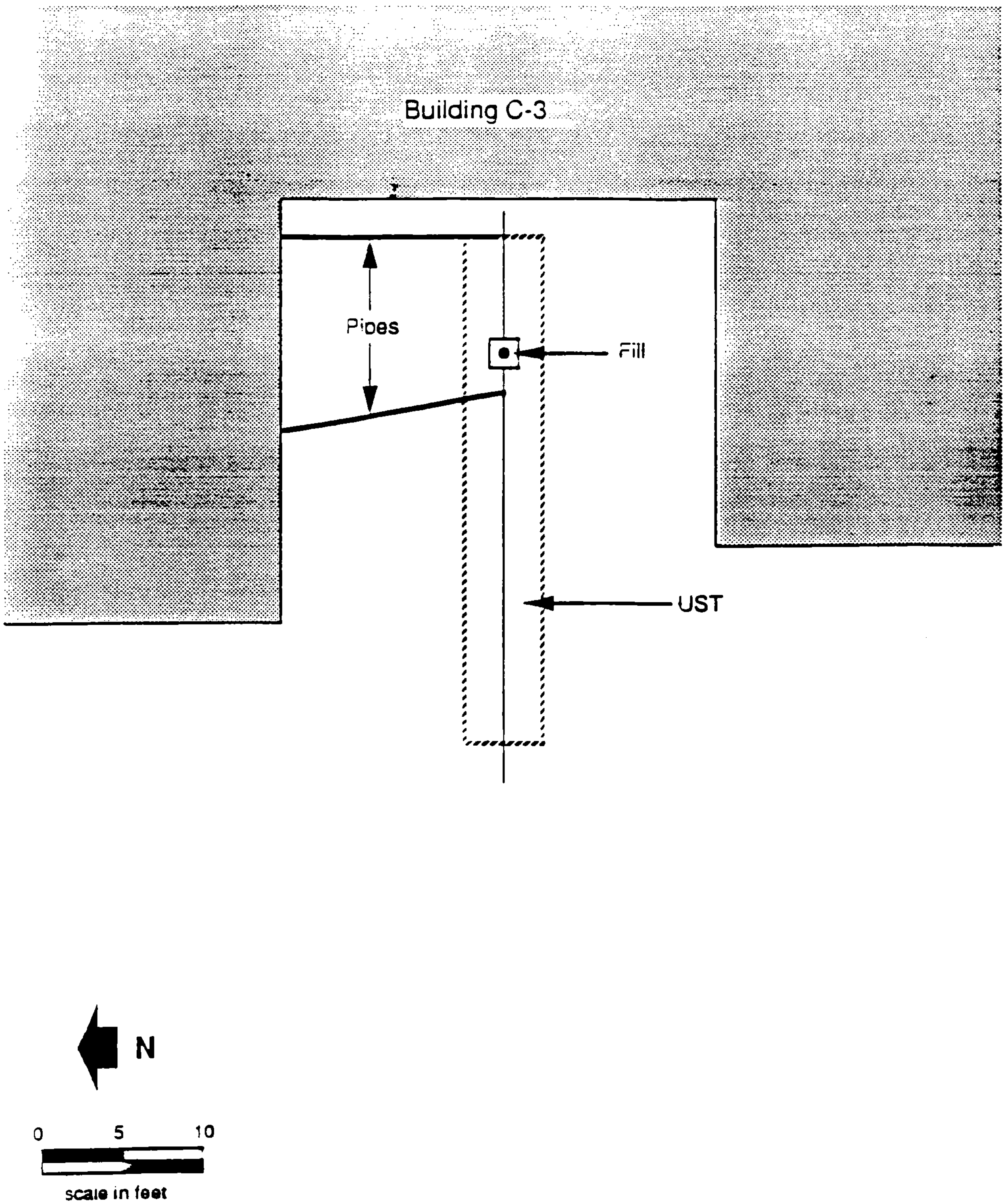
FIGURE 1-2

N. W. S. EARLE
COLTS NECK, N. J.



WESTON
MANAGERS DESIGNERS/CONSULTANTS

WATERFRONT AREA MAP	N. W. S. EARLE COLTS NECK, N. J.
FIGURE 1-3	



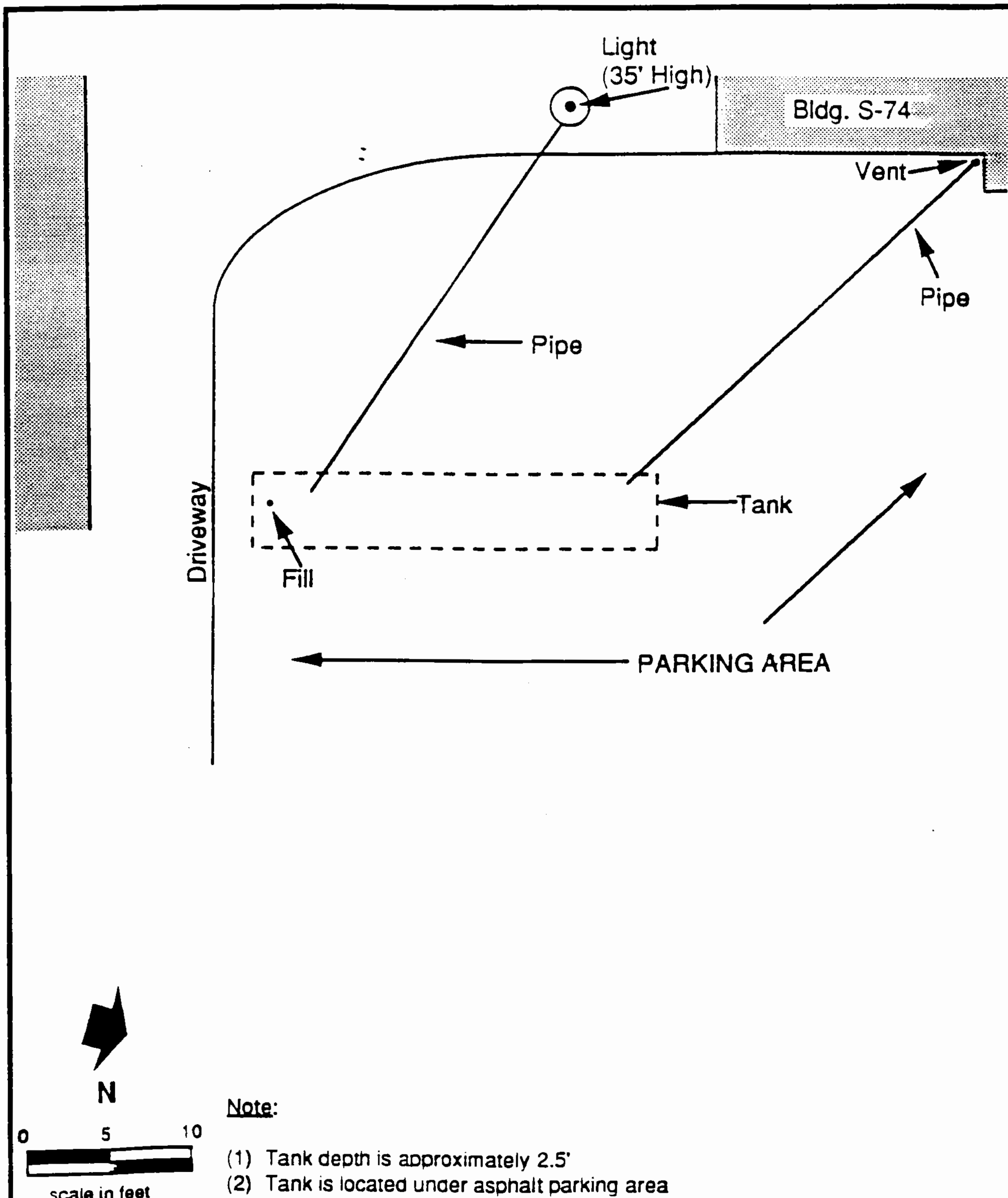
WESTON

BUILDING C3/1

SITE LOCATION MAP

FIGURE 1-4

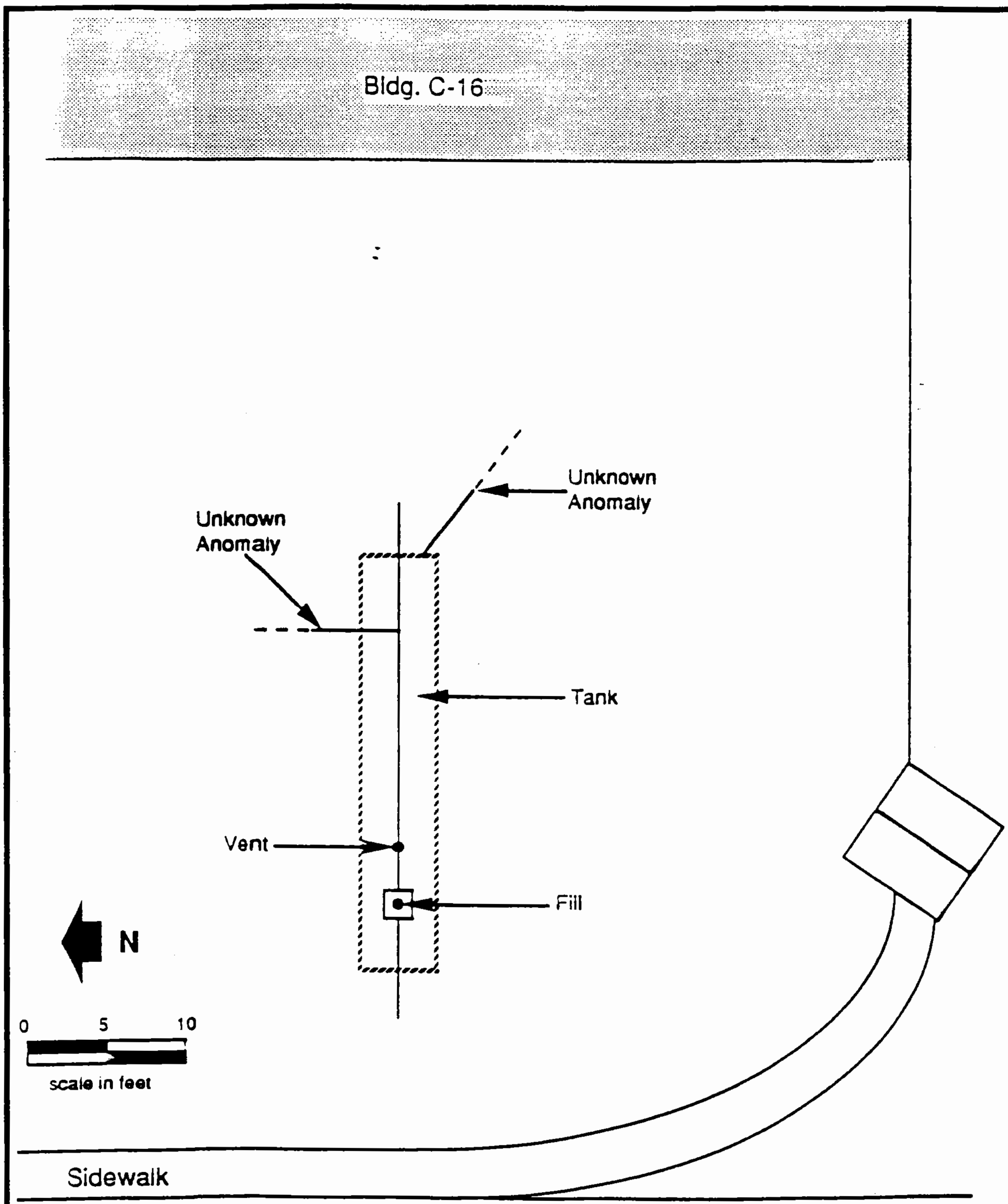
N. W. S. EARLE
COLTS NECK, N. J.



Note:

(1) Tank depth is approximately 2.5'
(2) Tank is located under asphalt parking area

WESTON MANAGERS DESIGNERS/CONSULTANTS	BUILDING C3/2 SITE LOCATION MAP FIGURE 1-5	N. W. S. EARLE COLTS NECK, N. J.

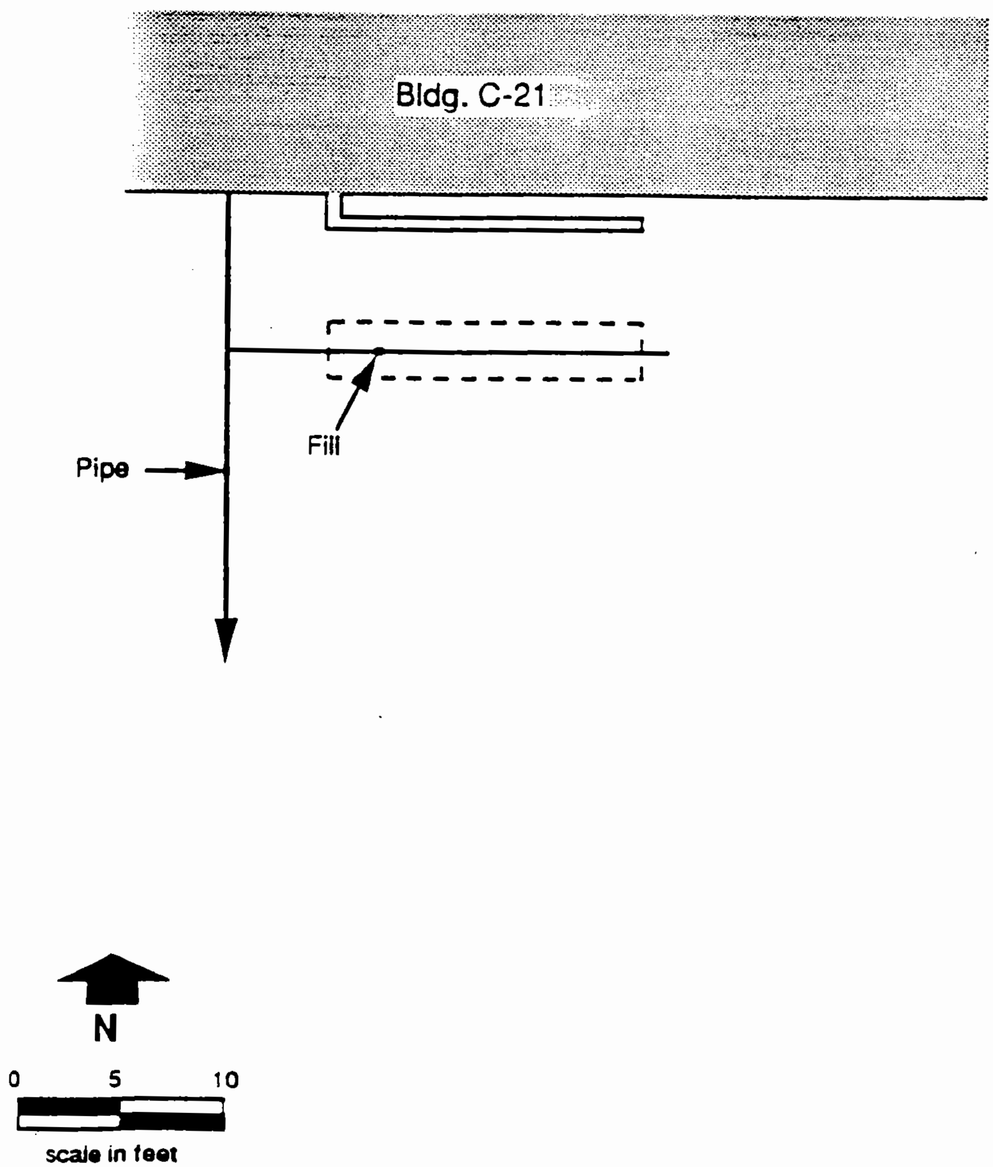


WESTON

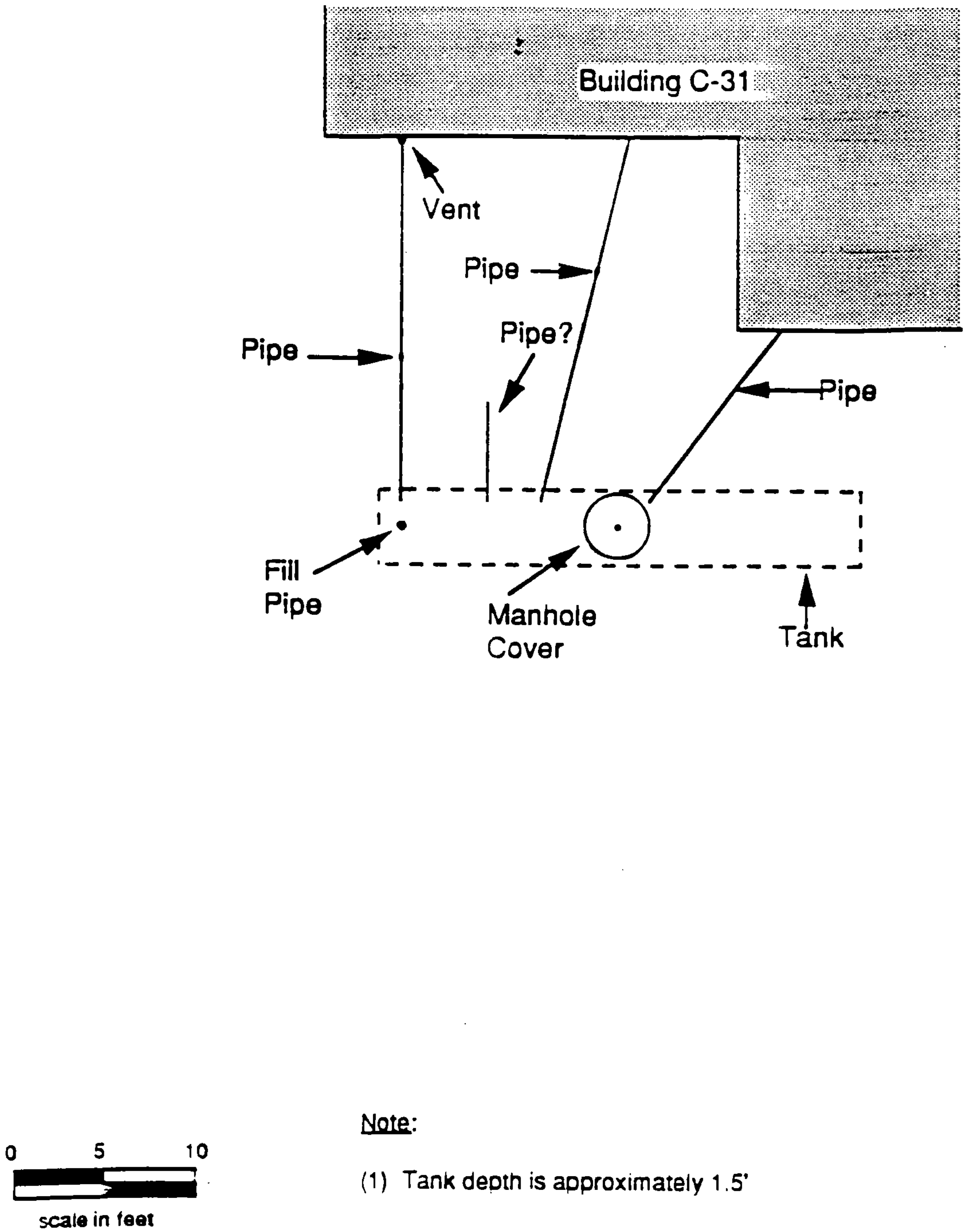
BUILDING C16
SITE LOCATION MAP

FIGURE 1-6

N. W. S. EARLE
COLTS NECK, N. J.



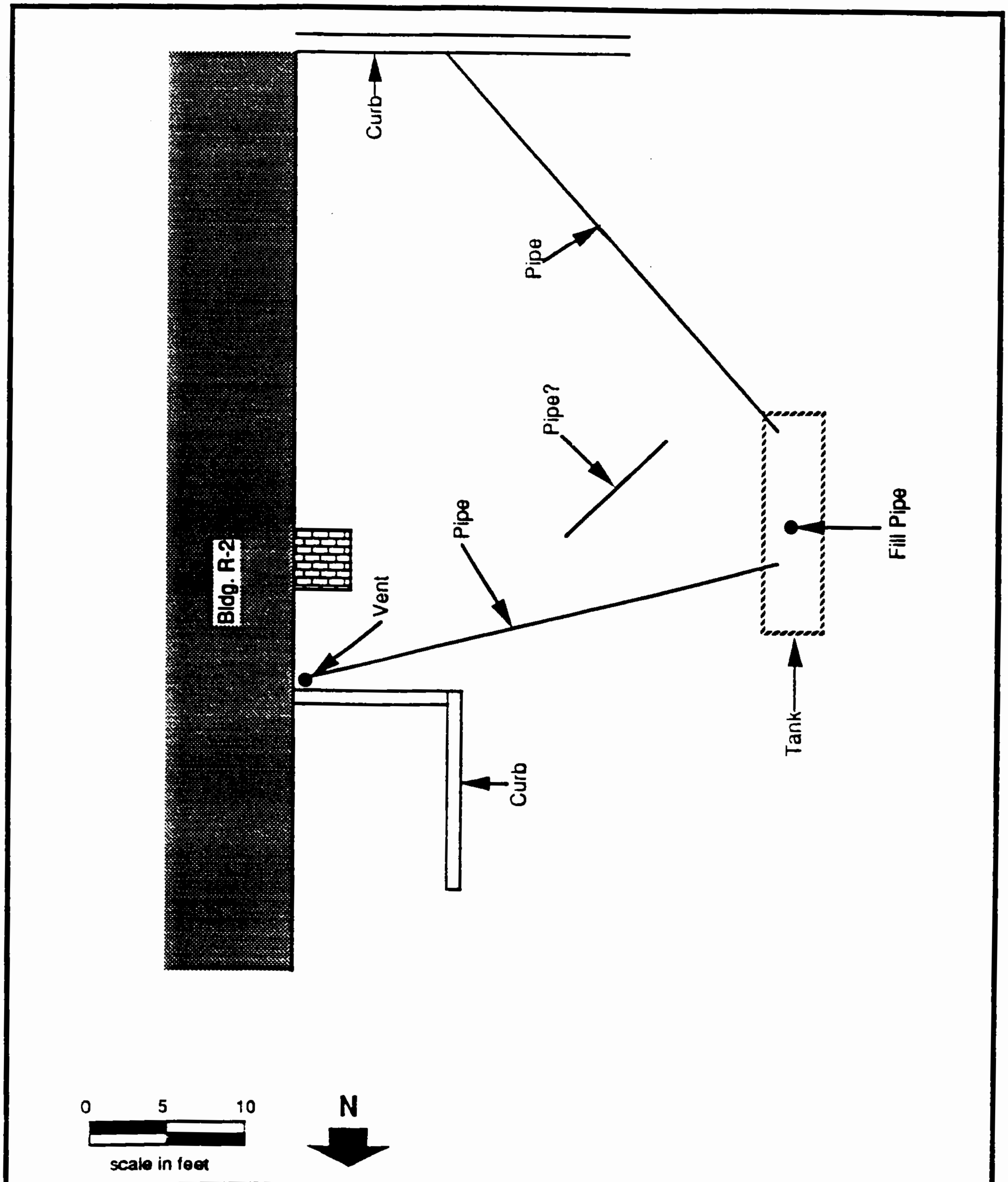
WESTON	BUILDING C21 SITE LOCATION MAP FIGURE 1-7	N. W. S. EARLE COLTS NECK, N. J.



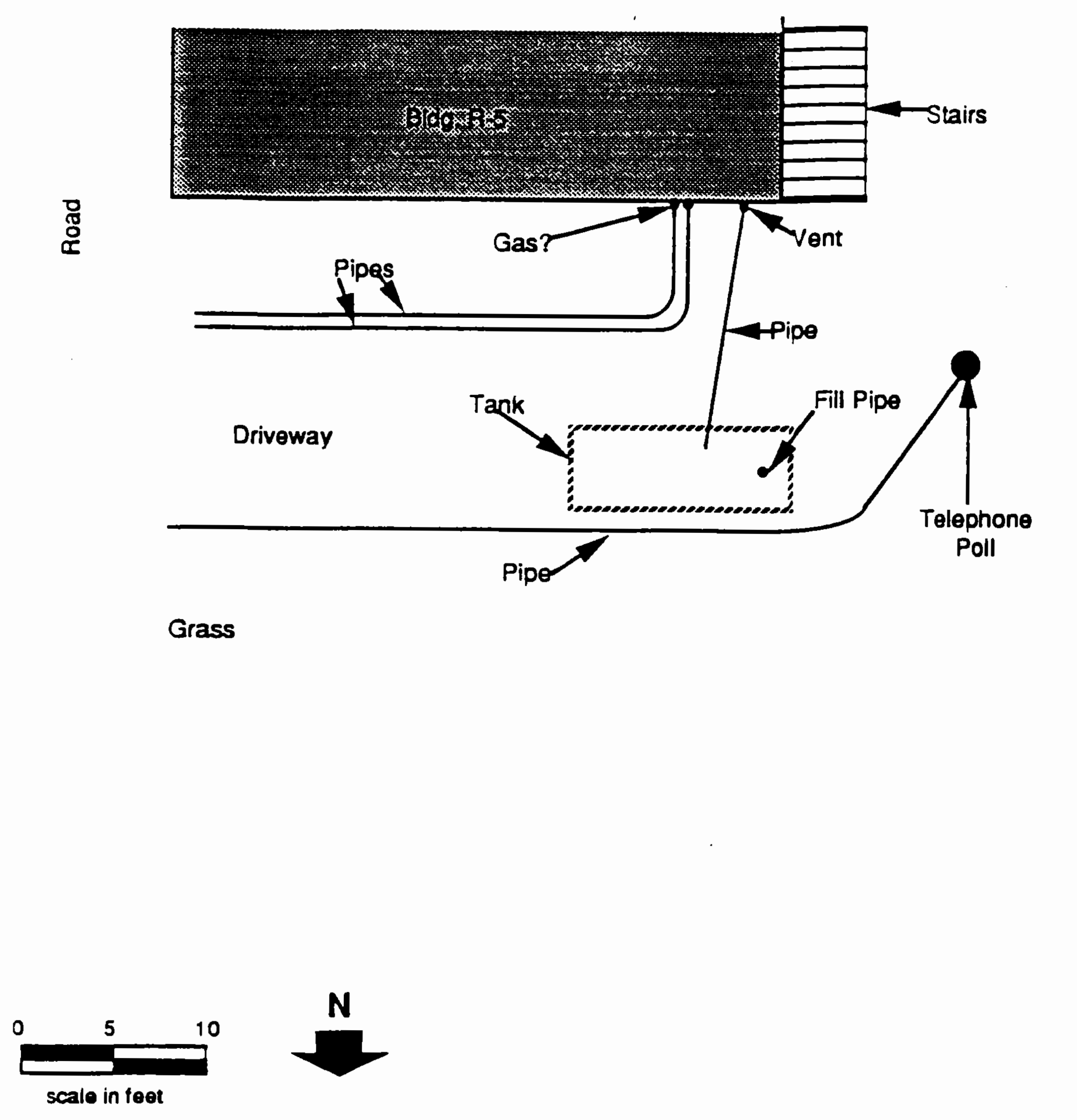
Note:

(1) Tank depth is approximately 1.5'

WESTON MANAGERS DESIGNERS/CONSULTANTS	BUILDING C31 SITE LOCATION MAP FIGURE 1-8	N. W. S. EARLE COLTS NECK, N. J.



WESTON MANAGERS DESIGNERS/CONSULTANTS	BUILDING R2 SITE LOCATION MAP FIGURE 1-9	N. W. S. EARLE COLTS NECK, N. J.

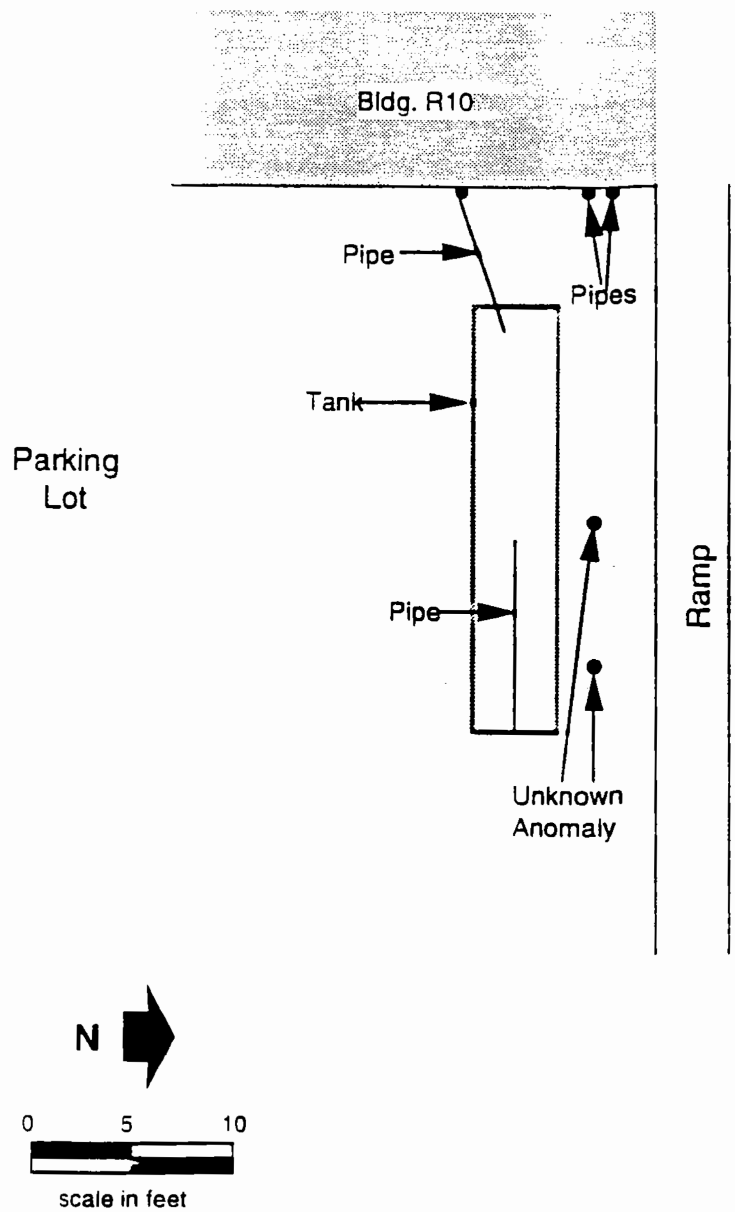


WESTON
MANAGERS DESIGNERS/CONSULTANTS

BUILDING R5
SITE LOCATION MAP

FIGURE 1-10

N. W. S. EARLE
COLTS NECK, N. J.



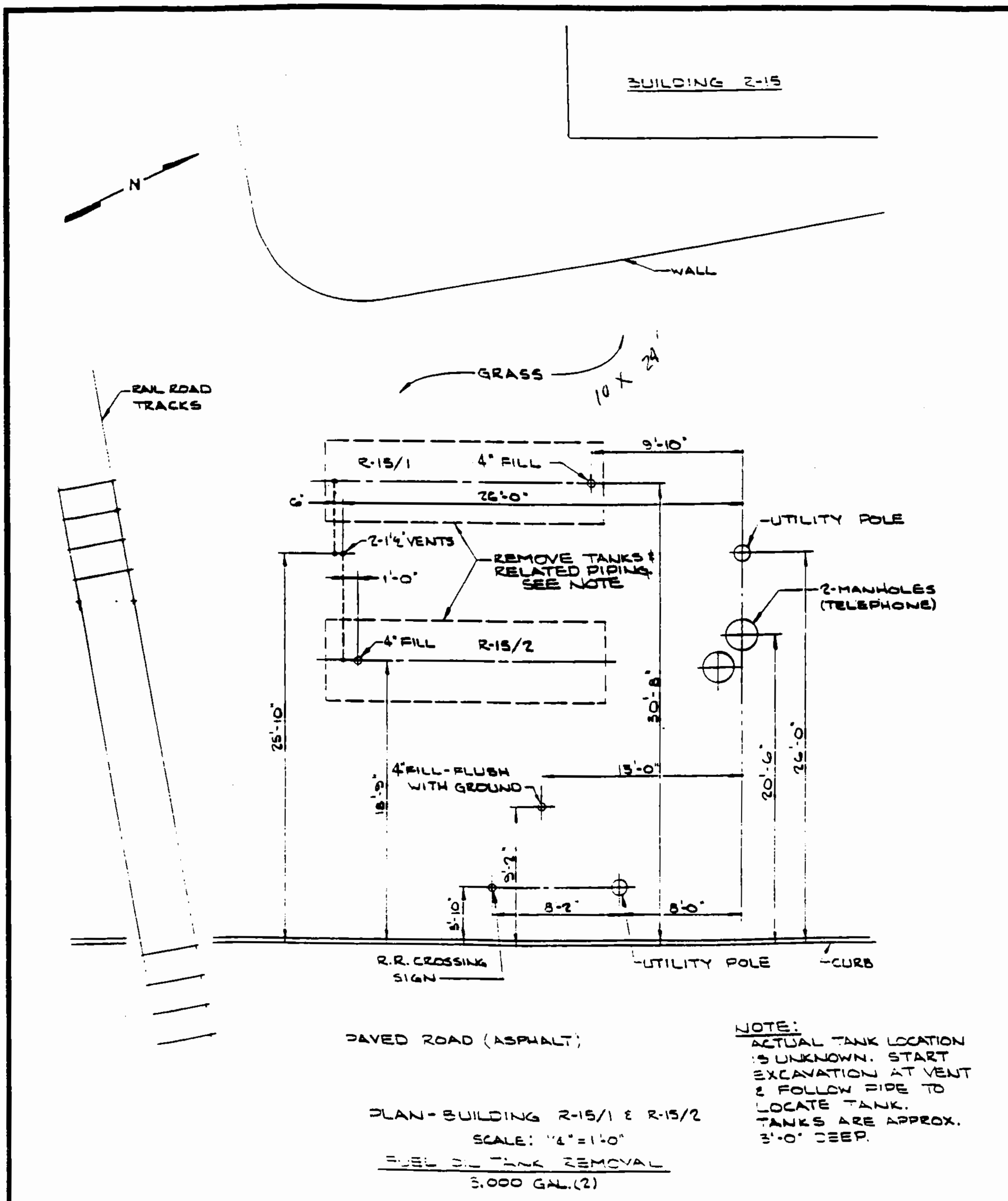
WESTON MANAGERS DESIGNERS/CONSULTANTS

BUILDING R10

SITE LOCATION MAP

FIGURE 1-11

N. W. S. EARLE
COLTS NECK, N. J.

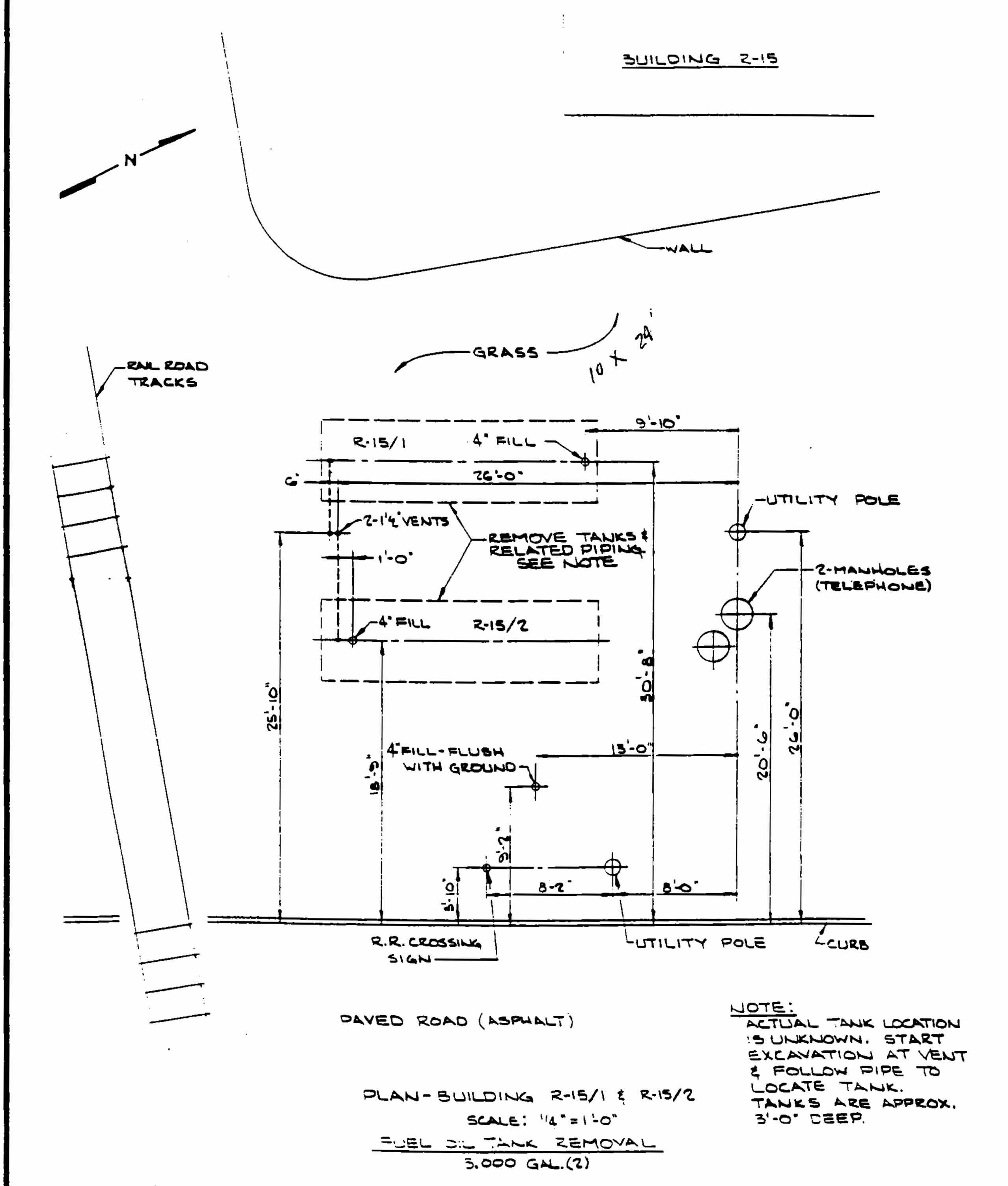


BUILDING R15/1

SITE LOCATION MAP

FIGURE 1-12

N. W. S. EARLE
COLTS NECK, N. J.



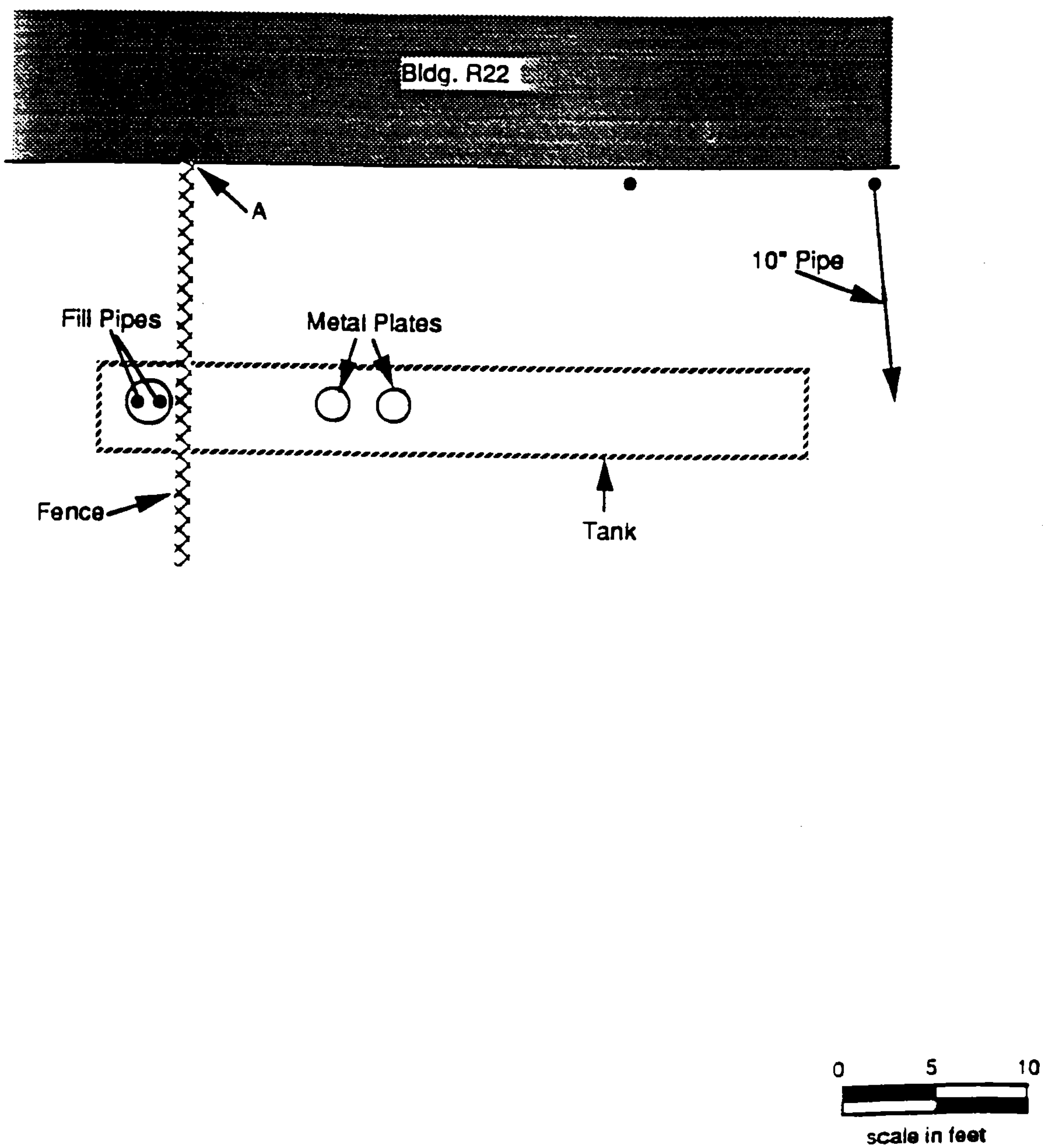
WESTON MANAGERS DESIGNERS/CONSULTANTS

BUILDING R15/2

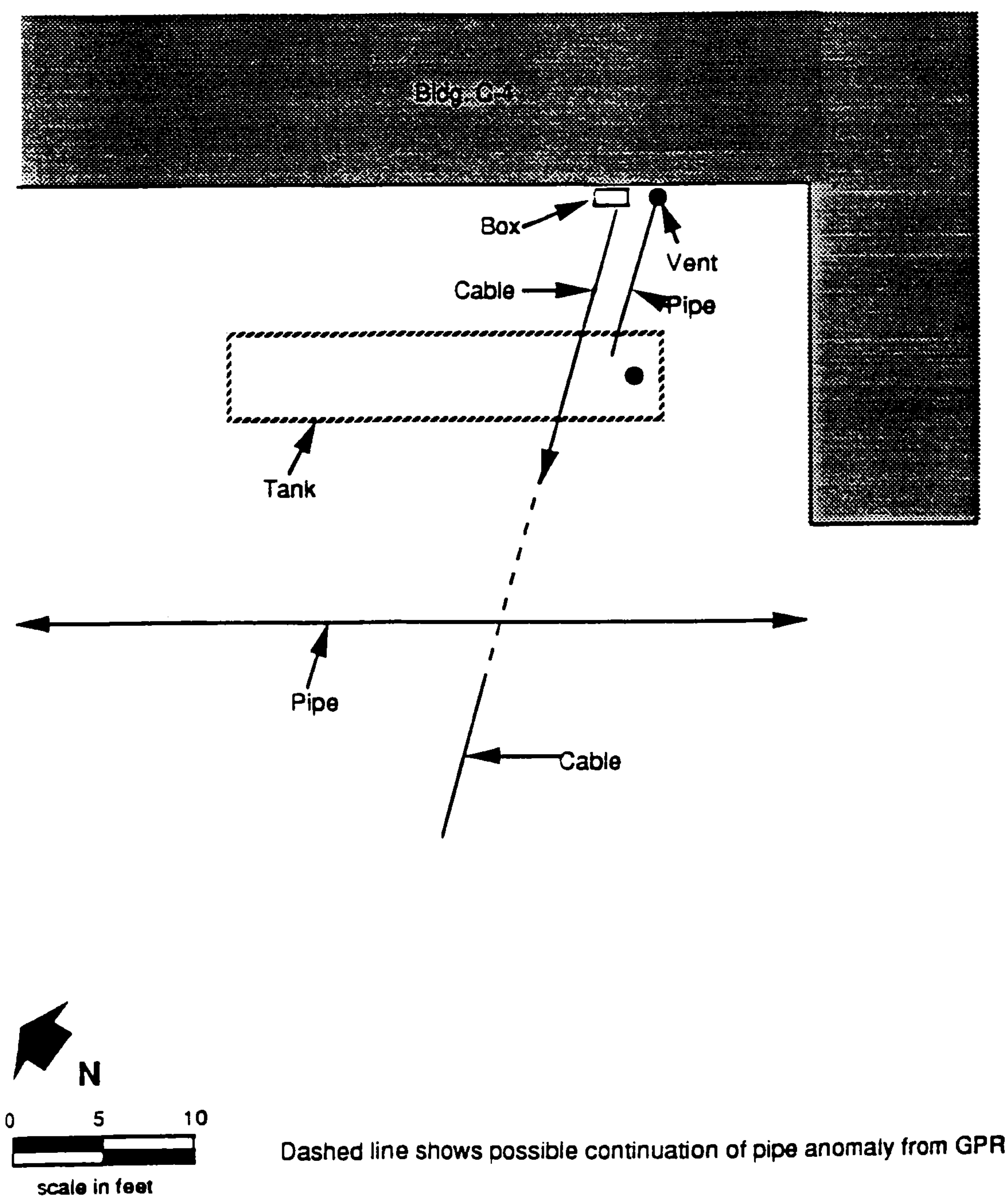
SITE LOCATION MAP

FIGURE 1-13

N. W. S. EARLE
COLTS NECK, N. J.



WESTON MANAGERS DESIGNERS/CONSULTANTS	BUILDING R22 SITE LOCATION MAP FIGURE 1-14	N. W. S. EARLE COLTS NECK, N. J.

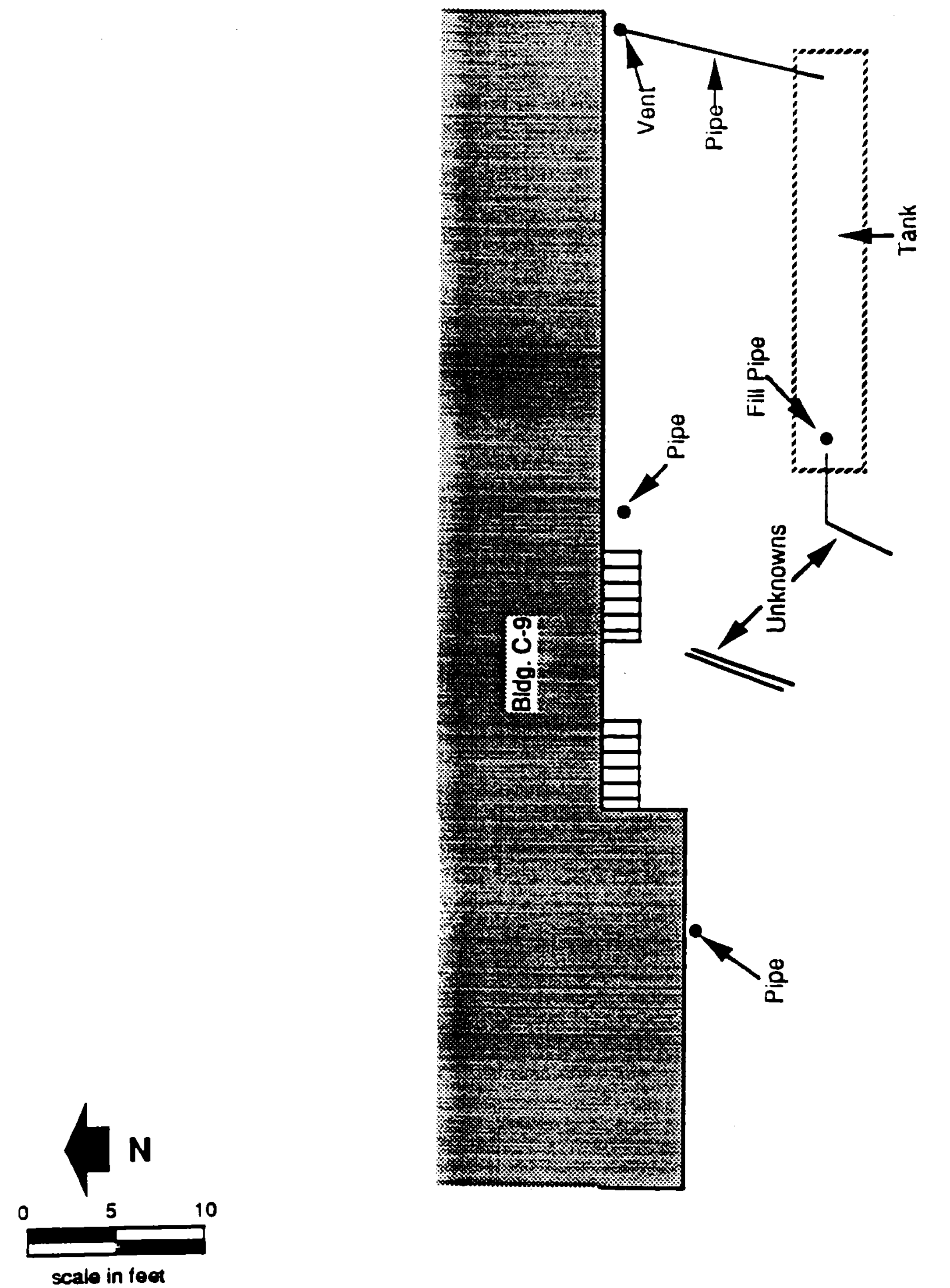


WESTON
MANAGERS DESIGNERS/CONSULTANTS

BUILDING C4
SITE LOCATION MAP

FIGURE 1-15

N. W. S. EARLE
COLTS NECK, N. J.



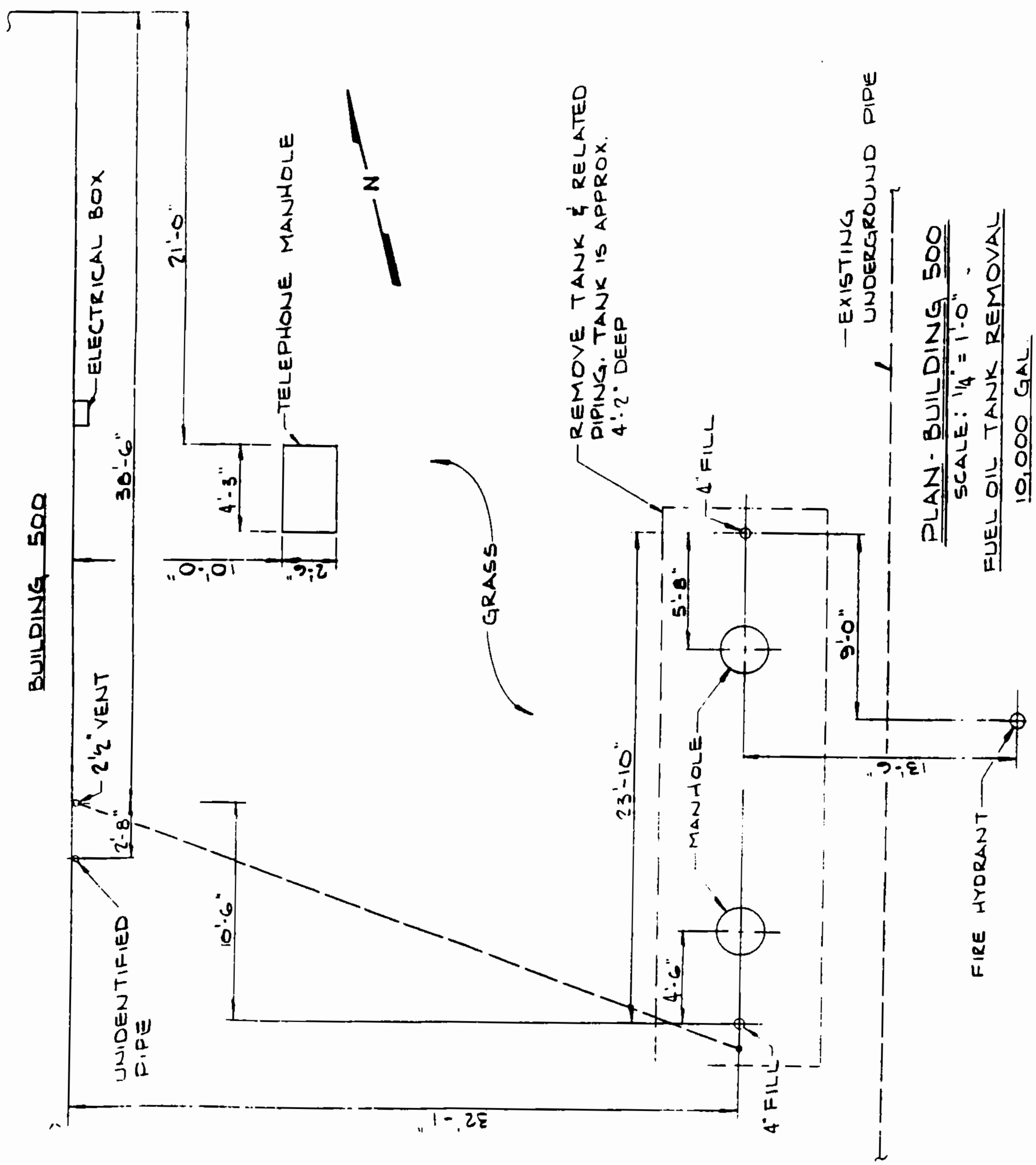
WESTON
MANAGERS DESIGNERS/CONSULTANTS

BUILDING C9

SITE LOCATION MAP

FIGURE 1-16

N. W. S. EARLE
COLTS NECK, N. J.



WESTON MANAGERS DESIGNERS/CONSULTANTS	**BUILDING 500** **SITE LOCATION MAP** **FIGURE 1-17**	**N. W. S. EARLE** **COLTS NECK, N. J.**

SECTION 2.0

TANK CLOSURE PROCEDURES

2.1 INTRODUCTION

The closure of the underground storage tanks will involve excavation, cleaning, and removal. This section describes these activities as referenced in the American Petroleum Institute (API) Publications 2015 (Cleaning Petroleum Storage Tanks) and 1604 (Removal and Disposal of Used Underground Petroleum Storage Tanks). These documents, in addition to N.J.A.C. 7:14B-9, the "Interim Closure Requirements for Underground Storage Tank Systems", the "Investigation and Corrective Action Requirements for Discharges from Underground Storage Tanks and Piping Systems", and N.J.A.C. 7:26E et.seq. (Technical Requirements for Site Remediation) will be used as guidelines. This plan summarizes procedures to be conducted on-site during the UST closure activities.

2.2 SITE PREPARATION

The following activities will be performed prior to actual tank removal:

1. Notify NJDEPE-BUST representatives of the expected start and finish dates for the closure of each individual storage tank, after receipt of the Closure Plan approval from BUST.

2. Obtain all applicable permits from local and state authorities. Notify local fire department of schedule of activities.
    - Excavation Permit from NWS-Earle Department of Public Works.
    - Hot Work Permit from the NWS-Earle Fire Inspector.

3. Inspect existing adjacent construction and structures to determine physical condition. A New Jersey licensed Professional Engineer will determine any structural limitations associated with the tank removals.

4. Perform utilities search followed by an inspection to ensure that no underground power lines or other utilities are connected to or in close proximity to the UST. Preliminary GPR surveys have been conducted to determine the individual tank positions.

5. Designate staging areas for concrete, encasement materials, soils, and tank decontamination liquids.

2.3 AIR MONITORING

Continuous air monitoring will be conducted when tank cleaning and removal work is taking place. These measurements will be used to adjust work procedures, environment, or protective equipment to assure the work area is protected against fire, explosion, and health and safety hazards.

Fire and explosion hazards associated with the closure and removal of USTs will be monitored by using a Combustible Gas Indicator (CGI). The CGI will be used to measure the Lower Explosive Limit (LEL) of a known material. LEL levels will be monitored and recorded in and around each tank prior to any excavation, cleaning, moving, or cutting of the tank. LEL levels will be monitored during any entry and cutting work activities. Atmospheres containing a vapor concentration of less than or equal to ten percent of the LEL will be considered protected against fire or explosion.

Volatile organic vapors in the ambient air, or breathing zone, in the area of each UST work area, will be monitored for with either an Organic Vapor Analyzer (OVA) or HNu Photoionization Detector (HNu) with a 10.2 eV probe. Oxygen content will be monitored for using an oxygen meter. Monitoring will occur during all excavation, cleaning, and removal activities of each tank. The OVA or HNu will be used to identify the presence and relative concentration of volatile organic vapors potentially present in the work zone. The oxygen meter will be used to determine that the atmosphere contains greater than or equal to 19.5% oxygen. Personnel in atmospheres containing less than 19.5% oxygen will use supplied-air respiratory protection.

Other air monitoring methods, such as Colorimetric Indicating Tubes, may be used to determine vapor concentrations of specific compounds. Use of this monitoring device is at the discretion of the Site Health and Safety representative.

All air monitoring instruments will be calibrated daily as per manufacturer's recommendations and procedures. Records of all calibrations and daily maintenance checks will be recorded daily on health and safety forms and entered into the permanently bound field logbook. Table 2-1 summarizes the application, detection method, and care and maintenance of these instruments.

2.4 TANK EXCAVATION

Prior to excavation, the UST will be rendered vapor free in accordance with API recommended procedures and other applicable fire regulations. Excavation of the tank will proceed after air monitoring indicates a safe vapor concentration has been established.

The site will be excavated to expose the top of the UST. Daily security measures will include highly visible fencing and banner tape to mark off the areas of excavation. All nonessential personnel will be excluded from the work area during this work.

The next step will involve removing all fill tubes and disconnecting all fill gauges and vent lines. Piping removal and disconnection will be conducted in a manner that assures fluids will drain back into the USTs. Open ends of all lines not to be used further will be capped or plugged. At this point, the tank is prepared for cleaning which is described in Section 2.5.

2.5 TANK CLEANING

Tank cleaning will begin after the tank has been emptied and rendered vapor free and access is provided. If manholes are found on the top of the tank, they will be used for entry. If manholes are not found, an entry hole will be cut in the top of the tank using an appropriate cutting method. If required, the tank interior will be inerted in accordance with API procedures using carbon dioxide, nitrogen, or other inert gas in order to create an oxygen deficient atmosphere inside the tank. After all cutting procedures are completed, the tank will be rendered vapor free in accordance with API procedures.

Cleaning of the tank will be accomplished with the implementation of remote equipment. This will be done in order to reduce the Health & Safety risks associated with a Confined Space Entry. The remote cleaning system used will be capable of water pressure up to 10,000 psi. The cleaning system will be attached to the manway or cut opening of the tank and the spray nozzle will be adjusted for the position and shape of the tank.

The tank will be rinsed repeatedly using the remote tank cleaning system. After each rinse, the rinsates will be pumped from the tank into a vacuum truck. The rinsates stored in the vacuum truck will be handled and disposed of as described in Section 4.0. The rinsates and tank interior walls will be visually inspected after each rinsing. When inspection of the tank's rinsates and interior walls indicate sufficient cleaning has occurred, tank removal can begin.

2.6 TANK REMOVAL

After the tank has been cleaned in place, all tank openings will be temporarily plugged before further excavation. All excavated soils will be handled in accordance with the procedures in Section 4.0. Once the excavation is completed, the tank tie-down straps (if present) will be cut and the tank will be removed from the excavation.

The condition of the tank will be observed and recorded. Subsequently, the excavation will be examined for evidence of product release. If evidence of a product release is noted, the NJDEPE will immediately be notified using the Environmental Action Hotline at (609) 292-7172. The soils in the excavation will be screened using the methods outlined in Section 3.0.

After removal from the excavation, the UST will be placed on poly sheeting and blocked to prevent movement. The tank will be labelled to identify its site of origin, ultimate destination site, and the substance(s) that were stored during its use. The ends of each tank will be cut open to render the tanks unusable. The tank will be rendered vapor free or inert as per API procedures before it is cut or perforated.

TABLE 2-1
DIRECT READING INSTRUMENTS FOR SITE ASSESSMENT

COMBUSTIBLE GAS INDICATOR (CGI)

Hazard Monitored:	Combustible gases and vapors.
Application:	Measures the concentration of a combustible gas or vapor.
Detection Method:	A filament, usually made of platinum, is heated by burning the combustible gas or vapor. The increase in heat is measured. Gases and vapors are ionized in a flame. A current is produced in proportion to the number of carbon atoms present.
General Care/Maintenance:	Recharge or replace battery. Calibrate immediately before use. The CGI is not designed for use in O_2 deficient atmospheres containing less than 19.5% O_2.
Typical Operating Time:	Can be used for as long as the battery lasts, or for the recommended interval between calibrations, whichever is less.

FLAME IONIZATION DETECTOR (FID) WITH GAS CHROMATOGRAPHY OPTION

Example:	Foxboro OVA
Hazard Monitored:	Many organic gases and vapors.
Application:	In survey mode, detects the concentration of many organic gases and vapors. In gas chromatography (GC) mode, identifies and measures specific compounds. In survey mode, all the organic compounds are ionized and detected at the same time. In GC mode, volatile species are separated.
General Care/Maintenance:	Recharge or replace battery. Monitor fuel and/or combustion air supply gauges. Perform routine maintenance as described in the manual. Check for leaks.
Typical Operating Time:	Eight hours, three hours with strip chart recorder.

ULTRAVIOLET (UV) PHOTOIONIZATION DETECTOR (PID)

Example:	HNu
Hazard Monitored:	Many organic and some inorganic gases and vapors.
Application:	Detects total concentration of many organic and some inorganic gases and vapors. Some identification of compounds are possible if more than one probe is measured.
Detection Method:	Ionizes molecules using UV radiation; produces a current that is proportional to the number of ions.

TABLE 2-1
DIRECT READING INSTRUMENTS FOR SITE ASSESSMENT
(CONTINUED)

General Care/Maintenance:	Recharge or replace battery. Regularly clean lamp window. Regularly clean and maintain the instrument and accessories.
Typical Operating Time:	Ten hours, five hours with strip chart recorder.

DIRECT READING COLORIMETRIC INDICATING TUBE

Hazard Measured:	Specific gas and vapors.
Application:	Measures concentration of specific gases and vapors.
Detection Method:	The compound reacts with the indicator chemical in the tube, producing a stain whose length or color change is proportional to the compound's concentration.
General Care/Maintenance:	Do not use a previously opened tube even if the indicator chemical is not stained. Check pump for leaks before and after use. Refrigerate before use to maintain a shelf life of about two years. Check expiration date of tubes. Calibrate pump volume at least quarterly. Avoid rough handling which may cause channeling.

OXYGEN METER

Hazard Monitored:	Oxygen (0_2)
Application:	Measured the percentage of 0_2 in the air.
Detection Method:	Uses an electrochemical sensor to measure the partial pressure of 0_2 in the air, and converts that reading to 0_2 concentration.
General Care/Maintenance:	Replace detector cell according to manufacturer's recommendations. Recharge or replace batteries prior to expiration of the specified interval. If the ambient air is more than 0.5% CO_2, replace the detector cell frequently. Lead in the form of tetraethyl lead, used in leaded gasoline, can foul the detector cell and make the oxygen meter inoperable.

SECTION 3.0

SITE ASSESSMENT

3.1 SITE ASSESSMENT

As required by N.J.A.C. 7:14B-9.2, 40 CFR 280.72 and N.J.A.C. 7:26E et.seq. (Technical Requirements for Site Remediation), a site assessment will be conducted. The site assessment will consist of visual inspection of the condition of the tank and surrounding soils, field tests on excavated soils, screening of excavated and in-place soils, with air monitoring and collection of soil samples for subsequent laboratory analyses.

3.2 ASSESSMENT METHODS FOR THE TANK CLOSURE

3.2.1 Visual Inspection

During the tank removal, soils will be examined for discoloration and staining from possible releases. Areas of staining or discoloration will be further evaluated for the presence of contamination using field screening techniques described below.

All stained or discolored soils removed from the excavation will be segregated from other soils free of visual indications of contamination. These soils will be sampled to confirm if contamination exists and to determine disposal characteristics. If soils are found without contamination using visual inspection or field screening techniques, the soil will be used as on-site fill.

3.2.2 NJDEPE Approved Field Test Methods

Two (2) NJDEPE approved methods of evaluating soils for free product content are the Soil/Water Agitation Test and Field Sorption Test. (Interim Closure Requirements for Underground Storage Tanks Systems, September 1990) WESTON may employ these test procedures as necessary. Both methods are described below.

Soil/Water Agitation Test Method

A clear jar is partially filled with a sample of the soil. Sufficient water is added to saturate the soil and bring the water to about 1 cm above the soil surface. The jar is sealed and the sample is agitated by shaking. The jar is then opened to check for the presence of a sheen on the water surface. If a sheen is present, the soils have been contaminated by free product. If no sheen is present, the soils are either contaminated with dissolved product or are free of contamination. The presence of a sheen should be checked under various lighting conditions and backgrounds since these factors will affect the visibility of the sheen. Obviously, this method should only be used with products that exhibit visible sheens in water. This method should be supplemented with the Field Sorption Test Method described below.

Field Sorption Test Method

This method is used to absorb free product from contaminated soils. A sample of the soil is pressed against a brown paper bag for about 10 seconds. Soils contaminated by free product will cause a "greasy" staining of the bag. The stain is more pronounced with fuel oils than for gasoline. Due to rapid evaporation of gasoline, the observer must check for evidence of staining from gasoline quickly before it volatilizes from the paper. Interference from soil moisture may result in water transfer to the bag but generally the water does not spread on the bag as does fuel oil or gasoline. This method should be supplemented with the Soil/Water Agitation Method described previously.

3.2.3 Screening with Air Monitoring Instruments

Air monitoring instruments such as an OVA or HNu are useful for screening soils for possible presence of contamination. Even when staining/discoloration is not present and field tests are negative, product vapors may still be present to indicate dissolved product contamination. Because of the instrument's high sensitivity to organic vapors, they may be used to assist field testing procedures and to direct additional excavation of possibly contaminated soils.

The excavation floor and walls will be screened with air monitoring instruments after all potentially further contaminated soils have been removed. This screening will be used to identify and guide post-excavation soil sampling. All screening results from air monitoring instruments will be documented and reported as part of a Final Closure Report.

3.2.4 Soil Sampling

Seven (7) soil samples will be collected from the excavation following removal of the tank. Additionally two (2) soil samples will be collected from the associated pipe run. The samples will be collected every five feet along the midline of the tank outline, except at least two (2) of the samples will be collected at two sidewalls. If groundwater is encountered in the excavation, then samples will be collected along the sidewall of the excavation, approximately six inches above the water level.

The post-excavation samples will be analyzed for total petroleum hydrocarbons (TPHC). If TPHC concentrations exceed 1,000 ppm, samples will be analyzed for the presence of volatile organics (VO+10) plus the ten highest peaks. Additional samples may be collected depending on the size of the excavation after removal of all potentially contaminated soil. Additionally, one field blank will be collected for VO+10 analysis at each location. Field blank analysis will only be performed if VO+10 analysis is performed on the soil.

Soil samples will be obtained from the excavation by the use of decontaminated sampling equipment. Sample locations will be located zero to six inches below the bottom of each tank for TPHC and six to twelve inches below the bottom of each tank for VO+10. Sampling equipment may include hand augers, steel trowels, scoops and scoopulas. Each piece of sampling equipment will be decontaminated prior to use at each new sample location and/or prior to sampling the designated soil strata. All sampling equipment will be constructed of stainless steel.

3.2.5 Groundwater Monitoring

The installation of monitoring wells and the implementation of a groundwater monitoring program will depend on sample results and field observations conducted during the removal of the USTs. If sample results, soil screening or visual observations indicate the presence of contamination at concentrations exceeding proposed NJDEPE cleanup standards, one monitoring well will be installed within the applicable excavation.

The monitoring wells will be installed to groundwater using approved methods and logged by a registered geologist. The wells associated with gasoline tanks will be sampled using NJDEPE approved sampling procedures and analyzed for VO+10, Methyl-tertiary-butyl-ether (MTBE), and Tertiary-butyl-alcohol (TBA). The wells associated with oil tanks will be sampled and analyzed for TPHC, BN+15, and VO+10.

3.3 SAMPLING EQUIPMENT DECONTAMINATION AND DOCUMENTATION

3.3.1 Sampling Equipment Decontamination

All reusable sampling equipment, except heavy machinery and submersible pumps, will be decontaminated according to the following procedure:

1. Non-phosphate detergent plus tap water wash.
2. Tap water rinse.
3. Distilled/deionized water rinse.
4. Total air dry.

All decontaminated sampling equipment will be stored and handled in a manner to prevent contamination. Information concerning the decontamination methodology, date, time, and personnel will be recorded in the field logbook.

3.3.2 Sample Documentation

During sampling, all activities will be recorded in a logbook to provide an accurate record of the sampling event and the procedures followed. Entries made by sampling personnel in the logbook include:

Date/Time/Weather
Sampler/Geologist/Soil Scientist Names
Building/Tank Number
Sample Point Identification (including location, matrix and sample depth)
Sketch Showing the Sampling Point Location (including reference distance)
Soil Profile
Sample Size
Sampling Equipment Used
Field Measures (where appropriate)
General Comments (e.g., odor, staining, etc.)

The field crew will also label each sample container with the appropriate information necessary to identify the sample as listed below:

Unique Sample Identification Number
Date
Time of Sampling
Name
Preservation
Analyses

This information is then supplemented and cross references on a Chain-of-Custody form which provides documentation of the handling of each sample from the time it is collected until it is relinquished to the laboratory.

A Chain-of-Custody form containing the information listed below is filled out by the field crew and signed by the sampler and all personnel handling the sample(s) before the sample(s) is/are relinquished to the laboratory. The Chain-of-Custody form should contain the following information:

Project Name
Date
Sampler's Initials
Sample Identification Number
Time of Sample Collection
Name/Description of Sample
Building/Tank Number
Preservation
Analytical Parameters
Number of Containers
Holding Conditions and Locations

Signature of all Handlers and Date and Time of Transfers
Organization or Affiliation of all Handlers and Reason for Transfer

All samples will be preserved at the time of collection and packaged in coolers of sufficient size to hold all containers, ice, and packaging material to prevent breakage.

At the laboratory, receipt of samples is recorded on the Chain-of-Custody form by laboratory personnel. The original or a copy of the form is returned to the shipper. The Chain-of-Custody record is checked by laboratory personnel against the information regarding the analysis requested. If any discrepancies are discovered, they are resolved with the person requesting the analysis and recorded to provide a permanent record of the event.

All samples will be analyzed at WESTON's Gulf Coast Laboratory located in University Park, Illinois. The Gulf Coast Laboratory is NJDEPE, EPA, and USATHAMA certified. Analytical reports will be assembled in a Reduced Laboratory Data Deliverable - USEPA/CLP Methods as stated in the N.J.A.C. 7:26E, Appendix A.

SECTION 4.0

WASTE MANAGEMENT PLAN

4.1 WASTES TO BE GENERATED

Several types of materials may be generated during tank closure. They include product contaminated soil, tank encasement material, concrete curbing and pads, tank decontamination waters, and underground storage tank and piping.

4.2 SITE PREPARATION

In preparation for tank closure work, areas will be designated for the segregation and storage of excavated materials. Several areas will be designated for segregation of non-contaminated concrete, asphalt, and soil; contaminated concrete, encasement material, and soil; and liquids generated from tank closure activities. These areas will be located with the possibility that storage of the materials may be necessary for 60 to 90 days.

4.2.1 Staging Area

All closure generated materials, except drummed liquids and the tank system (e.g., concrete, encasement material, soil, etc.), will be stored in a staging area. The staging area shall be constructed with a polyethylene membrane liner. If more than one piece of polyethylene sheet is required for the impoundment, then the seams shall be jointed using 8-inch lap joint sealed with a double layer of waterproof tape.

Closure generated materials stored in the staging areas will be covered with a polyethylene sheet barrier. The top membrane will be weighted down to protect against the weather. The staging area's condition will be inspected regularly.

4.2.2 Drum Storage Area

All liquids generated from closure of tanks will be stored in a vacuum tank truck or containerized in USDOT-approved, 55-gallon steel drums. Each drum will be labelled, including contents and date generated. Drums will be placed on polyethylene sheeting and will be covered with a clear polyethylene sheet barrier membrane. Covering the drums' tops will protect the drum heads from rusting.

4.2.3 Tank Storage Area

The tank will be stored on a level impermeable surface after it is removed from the excavation. Wooden blocks will be used to prevent movement while being stored. Excavated tanks will be covered with plastic sheeting and wrapped with warning tape until disposal.

4.3 WASTE DISPOSAL

4.3.1 Excavated Fill

Excavated fill is material removed from the excavation during tank closure that is not visibly stained or not likely contaminated based on site assessment findings. This material will be stored separately from materials suspected to be contaminated. This material will be screened with either an HNu or OVA meter following NJDEPE soil screening procedures. Only those materials that do not exhibit measurements above background air monitoring levels will be considered for this pile. After all excavation and removal work is completed, these materials will be returned to the excavation.

4.3.2 Contaminated Soil and Tank Encasement Material

All soils identified as visibly stained or as contaminated with free product will be stored in a separate staging area as described in Section 4.2.1. Also, tank encasement material will be stored in a similar fashion. Representative samples will be collected from each pile and will be analyzed for parameters designated in Table 4-1. Collecting extra samples or testing for additional parameters may be warranted based on requirements of anticipated disposal methods to be used. Consultation with disposal facilities will be conducted if necessary to determine their specific requirements. Additional laboratory analyses other than those indicated in Table 4-1 and submissions to treatment or disposal facilities and regulatory agencies may be required to classify soils.

4.3.3 Other Excavated Materials with Residual Contamination

During excavation, other materials may be encountered that show residual contamination. Residual contamination is defined as no free product present as demonstrated with the use of NJDEPE field testing methods but HNu or OVA meters show readings above background levels. These materials may have contained free product in the past, and time or leaching has reduced product levels. These materials will be segregated in a separate surface impoundment from the contaminated soil and tank encasement material. Representative samples will be collected of this material and will be analyzed for parameters designated in Table 4-1.

If analyses determine that these materials are contaminated below the proposed New Jersey cleanup standards (last revised 3/8/93), then they will be used for backfilling the excavations.

If laboratory analytical results indicate that contamination exceeds cleanup standards, then these materials will be handled and disposed in accordance with the NJDEPE protocols for "Management of Excavated Soils." These materials will be treated as wastes. Additional laboratory analyses other than those indicated in Table 4-1 and submissions to treatment or disposal facilities and regulatory agencies may be required to classify soils for waste disposal.

4.3.4 Tank Decontamination Fluids

Contaminated cleaning fluids and rinse waters will be generated during the tank cleaning operation. These materials will be stored in a vacuum truck or drummed in USDOT-approved containers upon removal from the tank.

Drums containing tank decontamination fluids will be transferred to the oil/water separator at Building R9. It is expected that these wastes will be handled as non-hazardous waste.

4.3.5 Tank

The tank, after cleaning and removal from the excavation, shall have holes cut in the ends to prevent tank reuse. A Certificate of Destruction shall be supplied by the disposal facility. Anticipated disposal is by an approved scrap metal processor.

TABLE 4-1
GUIDE TO HANDLING CLOSURE GENERATED MATERIALS FOR DISPOSAL/USE

Closure Generated Materials	Parameters to be Analyzed	Sample Frequency	Waste Category Disposal/Use Method
Excavated Fill (e.g., non-stained soils below paved surface and above tank and water table showing no evidence of contamination)	Screen with OVA or HNu meters.	None	Return to excavation after tank removal if HNu or OVA meter readings indicate same as background air levels.
Contaminated Soil and Tank Encasement Material (e.g., stained soils and concrete mortar)	TCLP, Reactivity, Total PCBs, VO+10, TPHC, PPM (Based on disposal facility requirements)	1 composite sample/100 cu yd: composite of 5 grab samples collected at an interval of 1 grab sample/20 cu yd. Analyze composite sample for all parameters except VO+10 1 grab sample/50 cu yd for VO+10	Waste will be disposed at approved treatment or disposal facilities.
<u>Potentially Contaminated Soils</u> Other Materials with Residual Contamination (e.g., soils not visibly contaminated, however, OVA and HNu screening indicates levels above background air levels)	TPHC (for oil USTs) VO+10 (for gasoline USTs)	1 grab sample/100 cu yd for TPHC 1 grab sample/50 cu yd for VO+10	If results of composite and grab samples are below proposed cleanup standards, then use as fill in tank excavation after tank removal. If results exceed limits and NJDEPE does not allow disposal on-site, then the material will be disposed of as either hazardous waste or ID-27 Dry Industrial Waste.
Tank Decontamination Fluids	Ignitability, Corrosivity, Total PCBs, VO+10, TPHC, PPM, Reactivity		Dispose as non-hazardous waste at the oil/water separator facility at Building R9.
Tank and Piping	Screen with CGI and HNu or OVA meters.	Screen at all openings to tank and at various depths within the tank.	Scrap metal for reclamation at an approved NJ facility.

LEGEND:

PCB - Polychlorinated Biphenyls
VO+10 - Volatile Organic Analysis
TPHC - Total Petroleum Hydrocarbons
PPM - Priority Pollutant Metals
BN - Base Neutral Compounds
TCL - Target Compound List

SECTION 5.0

SITE HEALTH AND SAFETY

This section of the Closure Plan describes the responsibilities of individuals to comply with the OSHA 29 CFR 1910 and 1926 as it pertains to the closure and installation of underground storage tanks.

The United States Navy is the owner and operator of the underground storage tank system to be closed at Naval Weapons Station Earle and will be responsible for overall project administration and contractor oversight.

Closure contractors for this contract will be responsible for following the procedures in the closure or abandonment of USTs at NWS-Earle. Each contractor shall develop a Health and Safety Plan for closure activities. The HASP must satisfy all OSHA requirements as stated in 29 CFR 1910.120. The contractor is responsible for providing a Site Health and Safety Officer (SHSO). The SHSO has total responsibility for ensuring that the provisions of the HASP are adequate and implemented in the field. Also, each contractor and subcontractor is responsible for certifying that their on-site employees meet all of the requirements for training 29 CFR 1910.120 and must prove that each individual is in compliance.

SECTION 6.0

IMPLEMENTATION SCHEDULE

NWS-Earle plans to complete all tank removals tentatively for 1 August 1994. Figure 6-1 shows the project implementation schedule for tank removal activities. This schedule is based on a NJDEPE Closure Plan review of 6 weeks and a laboratory turnaround time of 4 weeks. This schedule represents field activities for all the tanks. Prior to implementation, the designated NJDEPE representatives will be notified of start and estimated completion dates for these closures.

FIGURE 6-1

PROJECT SCHEDULE
NAVAL WEAPONS STATION EARLE
STORAGE TANK REMOVAL

	WEEKS																
PROJECT TASK	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
CLOSURE PLAN APPROVAL	■	■															
NJDEPE REVIEW			■	■	■	■	■	■									
LOCAL PERMITS, UTILITY SEARCH, AND MOBILIZATION									■								
TANK REMOVAL, SOIL SAMPLING										■	■						
LABORATORY ANALYSIS												■					
BACKFILL CLEAN EXCAVATIONS													■				
SITE RESTORATION													■				
CLOSURE REPORT PREPARATION														■	■	■	■