

M00263.AR.000044
MCRD PARRIS ISLAND
5090.3a

SITE SUMMARY AND INFORMATION PACKAGE FOR AGENCY FOR TOXIC SUBSTANCES
AND DISEASE CONTROL SITE VISIT TO ASSIST THE ASSESSMENT OF INSTALLATION
RESTORATION SITE MCRD PARRIS ISLAND SC
9/15/1995
MCCLELLAND ENGINEERS

03.03.00 101

ATSDR SITE VISIT
MCRD PARRIS ISLAND
SITE SUMMARY AND INFORMATION PACKAGE

1. Introduction:

1.1 This package is prepared for the Agency for Toxic Substances and Disease Control (ATSDR) to assist in the assessment of Installation Restoration (IR) sites located at Marine Corps Recruit Depot (MCRD) Parris Island.

1.2 MCRD Parris Island was recently placed on the National Priorities List (NPL). ATSDR is mandated to provide an independent Public Health Assessment (PHA) for each site on the NPL. ATSDR is scheduled to conduct the initial site visit 19 June 1995 through 21 June 1995, in support of the PHA of MCRD Parris Island.

2. Installation Description and History:

2.1 MCRD Parris Island is located on a barrier island in the southeast corner of South Carolina. The island consists of 30 to 40 feet of unconsolidated soils, containing a surficial aquifer, underlain by a limestone aquifer. The two formations are physically and hydraulically separated by 20 to 30 feet of low permeability soil forming an aquitard. The surficial aquifer is hydraulically connected to the surrounding rivers, creeks and marshes and is effected by tidal influences. The underlying limestone aquifer is used as a drinking water source in other parts of the county and regions south but is not currently used at Parris Island area due to high salinity. Drinking water is supplied to MCRD Parris Island by the Beaufort/Jasper Sewer and Water Authority.

2.2 The Depot provides training for male recruits east of the Mississippi and all female recruits, upon entry into the Marine Corps. Parris Island was initially established as a Naval Station and Shipyard in 1893. A wooden drydock was completed in 1893 and was used periodically for ship maintenance for approximately 30 years. The entire Island was transferred to the Marine Corps in 1915 to be used as a recruit depot. A small airfield (Page Field) was established in 1932 for use in training Marine Corps and Navy pilots. The airfield was expanded for use during the World War II effort and was deactivated in 1946 after the war.

2.3 Past disposal practices of wastes generated from facility, grounds and automobile maintenance operations are the primary concern at MCRD Parris Island. Releases of petroleum products and solvents have also occurred. A primary human health concern is the migration of these contaminants into the surrounding wetlands effecting local fish and shellfish colonies, that may be consumed by human populations.

3. IR Program History:

3.1 An Initial Assessment Study (IAS) was completed September 1986. The IAS is the functional equivalent to the Preliminary Assessment (PA) of the current Navy Installation Restoration Program (NIRP). Sixteen sites were assessed and six (sites 1, 2, 3, 4, 6 and 16) were recommended for confirmation study. The remaining sites (sites 5 and 7-15) were not recommended for confirmation study.

3.2 A Remedial Investigation Verification Step was completed May 1990, where the six sites recommended for confirmation study plus three additional sites (sites 17, 18 and 19) were investigated. The verification step is the functional equivalent to the Site Inspection (SI) of the NIRP. Three sites (sites 1, 2 and 16) were recommended for Remedial Investigation. One site (site 3) was recommended for Extended Site Inspection. Four sites (sites 6, 17, 18 and 19) were transferred to the Underground Storage Tank (UST) program. Site 4 was recommended for No Further Evaluation. One additional site (proposed site 45) has been identified since completion of the verification step. This site has not yet been included into the NIRP process. Refer to paragraph 4 for a description of these NIRP sites and Figure 1 for site locations.

3.3 A Hazard Ranking System (HRS II) scoring was completed May 1992 yielding a score of 71.59. The installation was re-scored by EPA in August 1994 yielding a score of 50.00. As a result of the EPA's HRS II scoring, the Depot was proposed for the NPL in August 1994 and was listed January 17 1995.

3.4 In addition to the NIRP process described above, a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) was completed in April 1990. The RFA was conducted since the Depot submitted a Part A permit for the Hazardous Waste Storage Building. An RFA is required for facilities seeking a RCRA permit. The Part A permit was withdrawn prior to issue of the RFA Report, but the Depot remains as Interim Status to date.

3.4.1 A total of 48 Sites were identified by the RFA. The RFA Sites included all 19 NIRP sites. The RFA recommended a RCRA Facility Inspection (RFI) for all the sites that were investigated by the RI Verification Step. In addition, the Inert Disposal Area (RFA Site 12) was recommended for RFI. Phase II sampling or integrity testing was recommended for seventeen Sites (RFA Sites 5, 7, 9, 10, 11, 13, 14, 15, 21, 27, 28, 35, 38, 42, 43, AOC A and AOC B). Refer to paragraph 5 for a description of these additional RFA Sites. Site AOC C was recommended for No Further Investigation pending Record Review. The remaining sites (RFA Sites 8, 19, 20, 22-26, 29-34, 36, 37, 39-41 and 44) were recommended for No Further Investigation.

3.5 Additional sites have been identified since MCRD Parris Island was proposed for the NPL. ~~These~~ new sites are recommended for a Preliminary Assessment (PA). Refer to paragraph 6 for a description of these newly identified sites.

4. Site Summaries:

4.1 Site 1 - Incinerator Landfill (Figure 2):

- Active from 1921 to 1965, the landfill received incinerator ash, combustible and non-combustible liquid and solid wastes. The landfill extends into the present-day marsh. RFA Site 41, Former Incinerator is associated with this site.
- Four wells were installed around the landfill (3 at the marsh boundary and 1 inland) during the verification step. Dissolved lead was detected at 0.101 ppm in groundwater samples and chloroform at 351 ppb, total chromium at 5.30 ppm and total lead at 204 ppm were detected in sediment samples collected in the adjacent marsh.
- The site was recommended for Remedial Investigation/Feasibility Study (RI/FS) by the verification step. RI/FS is expected to start June 1996.

4.2 Site 2 - Borrow Pit Landfill (Figure 3):

- Active from 1966 to 1968, the landfill received solid wastes, construction debris and paint wastes. The landfill was located in an abandoned borrow pit located within 100 feet of a tidal inlet. A portion of Site 15, Dirt Roads is associated with this site.
- Three wells were installed around the landfill during the verification step. Chloroform at 12 ppb, 1,2-dichloroethane at 20 ppb, dissolved chromium at .10 ppm and dissolved lead at 0.073 ppm were detected in groundwater samples. Dissolved cadmium at 0.083 ppm and dissolved chromium at 0.14 ppm were detected in surface waters and chloroform at 81 ppb was detected in sediments collected from the tidal inlet adjacent to the landfill.
- The site was recommended for RI/FS by the verification step. RI/FS is expected to start June 1996.

4.3 Site 3 - Causeway Landfill (Figure 4):

- Active from 1960 to 1972, the landfill was constructed from solid waste and fill material, forming a causeway connecting Horse Island and Parris Island. Material was deposited directly into the salt marsh. Hazardous waste was also reportedly deposited in this landfill. The Causeway was upgraded in the mid 1970s to upgrade the culverts connecting the water bodies on either side of the structure. No debris, other than clean fill material, was reportedly uncovered during this upgrade.
- Surface water and sediment samples were collected along the base of the causeway during the verification step. No priority pollutants or heavy metals in excess of drinking water standards were detected.
- The site was recommended for an extended site inspection to assess the impact to nearby fish and shellfish to determine the need for an RI/FS. A biota study was completed in August 1993. While certain contaminants were detected, no contaminants exceeded U.S. Food and Drug Administration (USFDA) action levels. Although there were no cases where USFDA action levels were exceeded, it is not possible to conclude that there is no public health risk associated with the consumption of seafood caught at this site based on these findings. Additional

studies to support a baseline risk assessment, to be conducted as a part of the RI, is expected. RI/FS is expected to start June 1996.

4.4 Site 4 - Dredge Spoils Area Fire Training Pit (Figure 5):

- The site was used for fire fighting training between the 1940s and 1960s. The exact location of the training pit is unknown since the original site has been covered with dredge spoils. Waste fuels and oils and small quantities of petroleum-based solvents were deposited into the training pit. Approximately 300 to 400 gallons of flammable liquids were burned per training session with one training session being conducted each month.
- Soil borings were advanced adjacent to the spoils area berm near the suspected location of the training pit. No volatile organic compounds or toxic concentrations of heavy metals were detected in any soil samples.
- This site was recommended for no further action by the verification step, however, limited Site Inspection is expected to be performed to evaluate any potential impact to groundwater since this was not addressed by the verification step. The SI is expected to start fiscal year 1997.

4.5 Site 6 - Former Automotive Hobby Shop Spill Area (Figure 6):

- Spills occurred at this site from 1969 to 1982 while disposing of waste lube oils into a UST (AS-26).
- This site was recommended for removal from the IR program by the verification step. The tank and impacted soils were removed in 1990 and a closure report was submitted to the state. Additional cleanup at this site is warranted. Any additional work will be conducted under the State program(s).

4.6 Site 16 - Pesticide Rinsate Disposal Area (Figure 7):

- Rinse water from pesticide operations was deposited directly onto the ground at this site from 1950 to 1978. A deep water well, connected to the underlying limestone aquifer, is located approximately 80 feet from this site. This well is used by the state to monitor aquifer capacity. This well has been damaged and may provide a pathway to the underlying limestone aquifer.
- Soil borings were advanced at this site during the verification step and pesticide DDT and degradation products DDE and DDD were detected.
- The site was recommended for RI/FS by the verification step. Additional studies to support a baseline risk assessment, to be conducted as a part of the RI, is expected. The RI/FS is expected to start June 1996.

4.7 Site 17 - Page Field Tanks (AS-16) (Figure 8):

- This site consisted of four inactive 25,000 gallon concrete USTs containing a water/fuel mixture.
- This site was recommended for removal from the IR program by the verification step. The tanks and impacted soils were removed in 1991 and a closure report was submitted to the state. Additional study at this site is warranted. Any additional study and cleanup of this site will be conducted under State program(s).

4.8 Site 18 - Page Field Tanks (AS-18) (Figure 9):

- This site consisted of four inactive 50,000 gallon concrete USTs containing a water/fuel mixture.
- This site was recommended for transfer from the IR program to the UST program by the verification step. The tanks have been abandoned in place and associated piping and impacted soils have been removed. Groundwater analysis is in progress, to determine the extent of groundwater contamination along the former pipeline. A Contamination Assessment Report is scheduled for issue March 1996. Cleanup efforts are expected to begin October 1996.

4.9 Site 19 (RFA Site AOC D) - MCX Service Station (Figure 10):

- This site consisted of four inactive 6000 gallon steel USTs that contained gasoline. This site is associated with the former building 850.
- This site was recommended for transfer from the IR program to the UST program by the verification step. The tanks and associated piping have been removed and a soil vapor extraction system is in place and operational. In addition, a pump and treat system is scheduled for installation October 1995.

4.10 Proposed Site 45 - Dry Cleaning Facility Spill Area (Figure 11):

- This site is located adjacent to an active dry cleaning facility.
- MCRD Parris Island personnel responded to an accidental release of Tetrachloroethylene (PCE) from the PCE storage tank containment basin in March 1994. The impacted soils were removed and properly disposed of in a hazardous waste landfill.
- A PCE contamination assessment was conducted and a conceptual corrective action plan was developed by an outside engineering firm (S&ME) contracted by the Moral Welfare and Recreation office at Parris Island. Old spills/leaks were discovered during the assessment when PCE and breakdown products Trichloroethylene (TCE) and cis-1,2-Dichloroethylene (DCE) along with petroleum-based solvents were detected. An air sparging/soil vapor extraction technology was suggested for cleanup of the site.
- This site is being considered for an interim action, to be accomplished at the beginning of fiscal year 1996. The follow-up RI/FS is expected to start June 1996.

5. RFA Conclusions:

5.1 Site 5 - Former Paint Shop Disposal Area:

- Active from 1930s to 1960s, dried waste paint and solvents were allegedly deposited at the edge of the Beaufort river, over approximately a 30 foot section of bank behind the Main Power Plant, building 160. The site was covered with marsh soil and construction rubble during 1972. The exact location of this site is unknown since the remains have been eroded by tidal action and periodic storms.

- This site was recommended for RFA Phase II Sampling. Sampling are expected to be conducted as part of an SI to screen this site for RI/FS. The SI is expected to start fiscal year 1997.

5.2 Site 7 - Page Field Fire Training Pit:

- This site was active from the mid 1960s to 1976. The concrete pit, constructed on a concrete pad received waste fuels and waste oils that were burned for training purposes. The site was abandoned approximately 2 to 4 months after a leak was discovered. The structure has been demolished.

~~This site was recommended for RFA Phase II Sampling. Additional sampling was conducted by an Addendum to the RI Verification Step.~~ A soil gas vapor survey was conducted around the perimeter of the site and no VOCs were identified. Three shallow ground water monitoring wells were installed and no dissolved metals (cadmium, chromium and lead) exceeding Drinking Water Standards were detected. This site was recommended for No Further Investigation by the Addendum to the Verification Step. The IR team considers determination of groundwater flow to be warranted prior to concurring with the No Further Investigation recommendation. ~~to ensure no data gaps exist.~~

5.3 Site 11 (RFA Site 9) - MCX Service Station Spill Area:

- This site is associated with the area around the inlet to a 500 gallon waste oil tank located adjacent to the former building 850. The tank was active from 1969 to 1983. Contaminated soils around the inlet were removed in 1983.
- This site was recommended for RFA Phase II Sampling. The exact location and condition of this site is unknown at this time. Any additional investigations at this site shall be conducted by State program(s).

5.4 Site 12 (RFA Site 10) - Jericho Island Disposal Area:

- Active from 1955 to 1968, this site was used by area residents for uncontrolled open dumping. The site received domestic trash, placed on the edge of the island extended southward to the marsh.
- This site was recommended for RFA Phase II Sampling. This site, along with adjoining Doggie Island, shall be assessed and cleaned of debris if warranted. Screening samples may be taken if determined to be appropriate. This determination shall be made by the IR team consisting of representatives from the EPA, the State, the Installation and the Navy Engineering Field Division.

5.5 Site 13 (RFA Site 11) - Inert Disposal Area A:

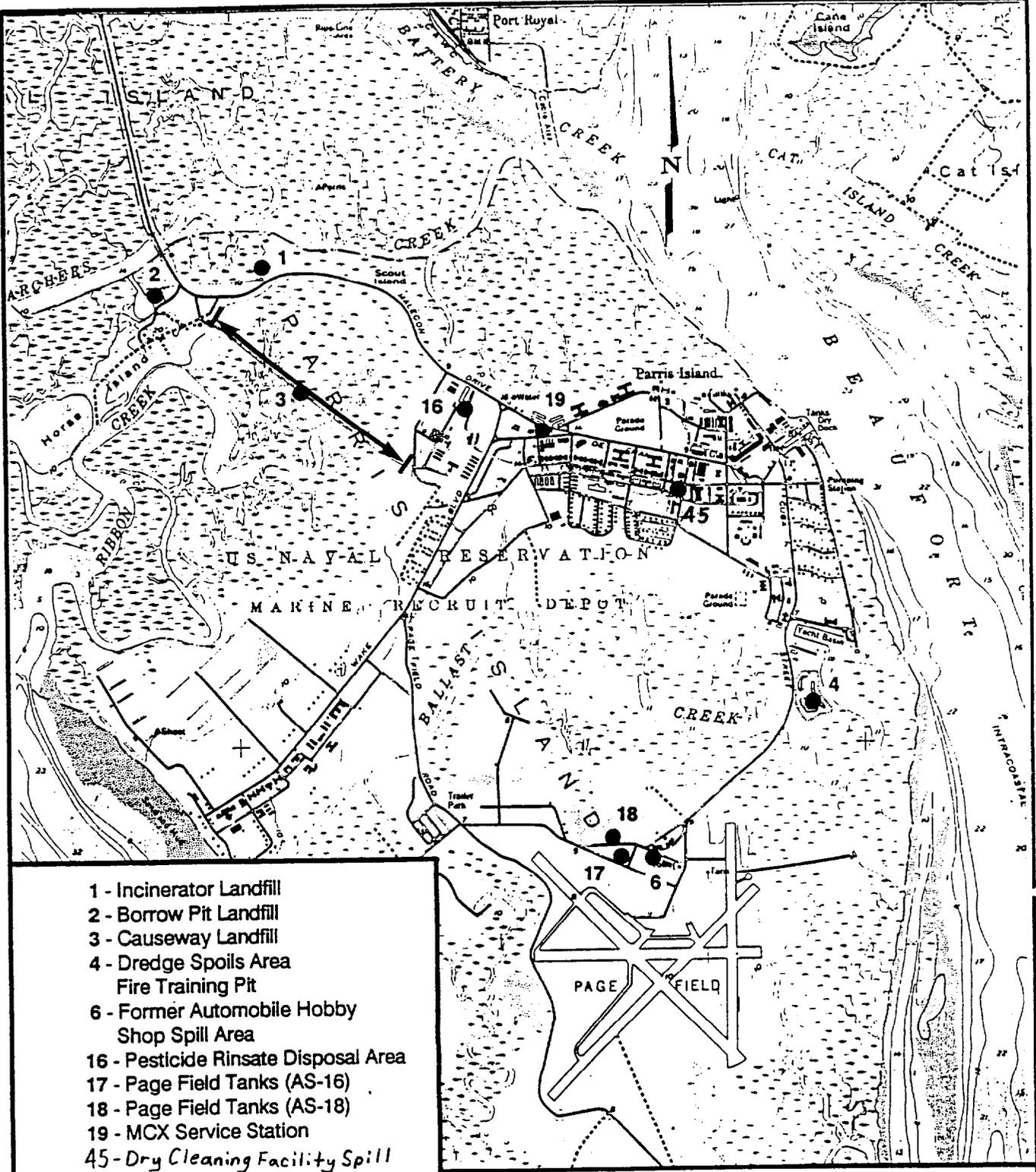
- Located on the south side of Horse Island, this unlined landfill receives inert material such as construction debris and yard waste. The landfill was active from 1979 to 1991 and was closed by the state.
- This site was recommended for RFA Phase II Sampling. The IR Team recommends no further action for this site since was a state controlled domestic landfill.

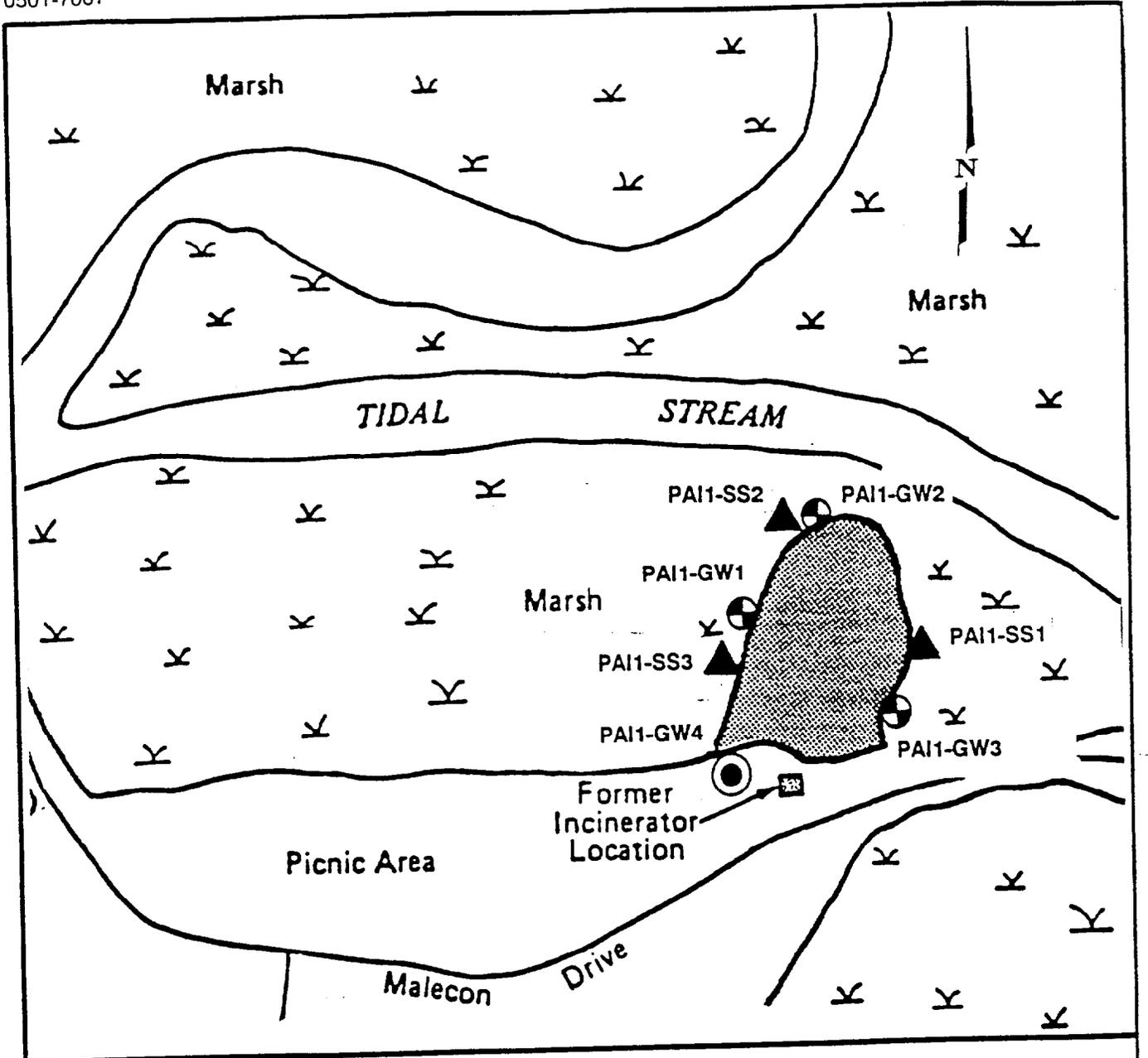
- 5.6 Site 13 (RFA Site 12) - Inert Disposal Area B:
- Located near Elliot's Beach, this unlined landfill received inert material such as construction debris and yard waste. The site was active from 1976 to 1979 as an interim status solid waste landfill and was closed by the state.
 - This site was recommended for RFI. The IR Team recommends no further action for this site as a state controlled domestic landfill.
- 5.7 Site 13 (RFA site 13) - Inert Disposal Area C:
- This site received dredge spoils from the marina basin and Ballast Creek. The site is underlain by the Dredge Spoils Area Fire Training Pit.
 - This site was recommended for RFA Phase II Sampling. Since there is no evidence of hazardous materials existing in the spoils, this site is recommended for no further action by the IR team. In addition, the State has approved no further action for this site.
- 5.8 Site 14 (RFA Site 14) - Storm Sewer Outfalls:
- This site consists of the piping system that has been in place since 1918. The system includes more than 60 outfalls that discharge into the surrounding surface waters. Small amounts of wastes from garages and other shops, dispensary/dental clinic, photo lab, steam plant and cooling tower were reportedly discharged into the storm sewers prior to the mid 1970s.
 - This site was recommended for RFA Phase II Sampling. Additional samples are expected to be taken as part of an SI to screen this site. Any screening will concentrate on the outfalls that originate from potential industrial sources.
- 5.9 Site 15 (RFA Site 15) - Dirt Roads:
- Waste oils were deposited on dirt roads throughout the Depot from 1941 to 1966 for dust control. Many of these roads have since been paved over with asphalt.
 - This site was recommended for RFA Phase II Sampling. The IR team recommends no further action since the only remaining dirt roads of concern that have not been paved are adjacent to site 2 and will be addressed as part of the RI/FS for Site 2.
- 5.10 RFA Site 21 - Weapons Power Plant Oil/Water Separator:
- Active since the 1980s, this site receives runoff from a fuel oil unloading area. Effluent from the separator flows to the nearby marsh.
 - This site was recommended for RFA Phase II Sampling. Any additional effort for this site will be conducted under State program(s).
- 5.11 RFA Site 27 - Equipment Parade Deck Satellite Accumulation Area:
- This site is located on the former 3rd Battalion Parade Deck. The site is approximately 1000 square feet in size located on an asphalt pad approximately 1 acre in size. The site is used as an equipment laydown area and for storage of salvage items. Evidence of stained and cracked asphalt was noted

- This site was recommended for RFA Phase II Sampling. Sampling are expected to be conducted as part of an SI to screen this site for RI/FS. The SI is expected to start fiscal year 1997.
- 5.12 RFA Site 28 - Power Station Satellite Accumulation Area:
- This site is a small outdoor concrete pad located behind the Main Power Plant, used for storage of kerosene, waste oil and waste oil contaminated soils since the mid 1980s. The pad is cracked and stained.
 - This site was recommended for RFA Phase II Sampling. Any required screening samples shall be conducted under State program(s).
- 5.13 RFA Site 35 - Defense Reutilization and Marketing Office (DRMO) Salvage Yard:
- Approximately 3 acres in size, this site has received salvage items from the Depot and the Marine Corps Air Station in Beaufort since 1964. Approximately 80% of the yard is paved with asphalt. Cracked asphalt was noted beneath lead-acid batteries placed in the area. All batteries are required to be drained prior to DRMO receiving the material.
 - This unit was recommended for RFA Phase II Sampling. Screening samples shall be taken as part of an SI.
- 5.14 RFA Site 38 - Underground Waste Oil Tank:
- Active since the 1970s, this site is located at the Diesel shop, building 864 and received waste oil and paint wastes. The is no longer active and are scheduled to be removed during fiscal year 1996.
 - This site was recommended for RFA Phase II Sampling. Screening effort for this site shall be performed under State program(s).
- 5.15 RFA Site 39 - Electrolyte Basin:
- This site is associated with the battery acid tank outside the battery room at the Motor Transport, building 155. The tank received used battery acid disposed of during battery maintenance. Acid is no longer deposited into the tank. Details of the tank configuration, condition any connection to the Sanitary Sewer is unknown at this time.
 - This site is recommended for a Preliminary Assessment (PA).
- 5.16 RFA Site 41 - Former Incinerator:
- This site is associated with and adjacent to Site 1, Incinerator Landfill. Ash collected in the sink during incinerator operations was deposited into the adjacent landfill.
 - This site shall be evaluated in conjunction with the RI/FS for Site 1.
- 5.17 RFA Site 42 - Sanitary Sewer System:
- The system has been in place since 1918 and transfers wastewater to the on-site wastewater treatment facility. Effluent from the treatment facility is discharged to the Beaufort River.

- This site was recommended for RFA Phase II Sampling. This site is recommended for no further action by the IR team since the outfall is regulated by the NPDES permit.
- 5.18 RFA Site 43 - Motor Pool Underground Waste Oil Tank:
- This site (tank 176) is located near the Outdoor Motor Pool and received waste oils. The tank has been inactive since approximately 1982, is scheduled for removal during fiscal year 1996. Staining was noted around the tank inlet.
 - This site was recommended for RFA Phase II Sampling. Initial screening efforts for this site shall be conducted under State program(s).
- 5.19 Site 8 (RFI Sites AOC A and AOC B) - PCB Spill Areas:
- These sites are associated with PCB spills from transformers in 1983 and 1984. In both cases, the spills were cleaned up and PCB contaminated materials were properly disposed of.
 - Phase II Sampling was recommended by the RFA but the IR Team recommended for No Further Investigation for these sites pending Document Reviews to ensure adequacy of cleanup.
- 5.19 Site 9 (RFI Site AOC C) - Gasoline Spill Area
- This site is associated with a spill of approximately 97 gallons of gasoline near building 170 in 1983. Contaminated soils were removed and disposed.
 - Phase II Sampling was recommended by the RFA but the IR Team recommended for No Further Investigation for this site.
6. Newly Identified Sites Proposed for PA:
- 6.1 Septic Tanks: Several inactive septic tanks exist in areas where there was a potential for hazardous substances to have been introduced. These areas include the 13th hole of the golf course (pesticides) and the Old Hobby Shop (oils and solvents). Both active and inactive septic tanks exist in other locations on the island but are not being considered for assessment since there is potential for having received contaminants.
- 6.2 Old Dry Cleaning Facility: A dry cleaning facility existed prior to the dry cleaning that is presently used. The exact location of the facility is unknown. Although there are no known releases from this facility, the site is included since dry cleaning facilities historically have exhibited a high potential for releases.
- 6.3 Transformer Staging Area: The Base Operating Service Contractor used a fenced area behind building 177 for the storage of transformers between approximately 1990 and 1992. PCB contaminated transformers may have been stored at this location.

- 6.4 Hobby Shop: Contamination is suspected in an abandoned steam line condense pit adjacent to the current Hobby Shop. The type, source and extent of the contaminant is unknown.
- 6.5 Old Photo Shop: The Old Photo Shop was located at the former building 853. Although there are no known releases from this facility, the site is included since photo shops historically have exhibited a high potential for releases.
- 6.6 Existing Photo Shop: The Photo Shop is located in building 283. Although there are no known releases from this facility, the site is included since dry cleaning facilities historically have exhibited a high potential for releases.
- 6.7 DRMO: The DRMO is located at building 629 and 630. The history of operations at this site are uncertain and there is a potential for past releases.
- 6.8 Rifle Ranges: This item concerns military small arms ranges and recreational ranges such as skeet ranges. The EPA is currently developing regulations for ranges. Assessment of ranges will not progress until regulatory guidelines are in place.
- 6.9 Daylight Infiltration Course: This site has been investigated by an Addendum to the Verification Step and was recommended for No Further Investigation. The IR Team proposes limited investigation of this site to ensure data gaps do not exist.
- 6.10 Old Weapons Cleaning Areas: Weapons cleaning practices are proposed for assessment to determine if solvent wastes generated during cleaning operations were accumulated at a given site(s).



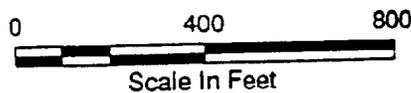


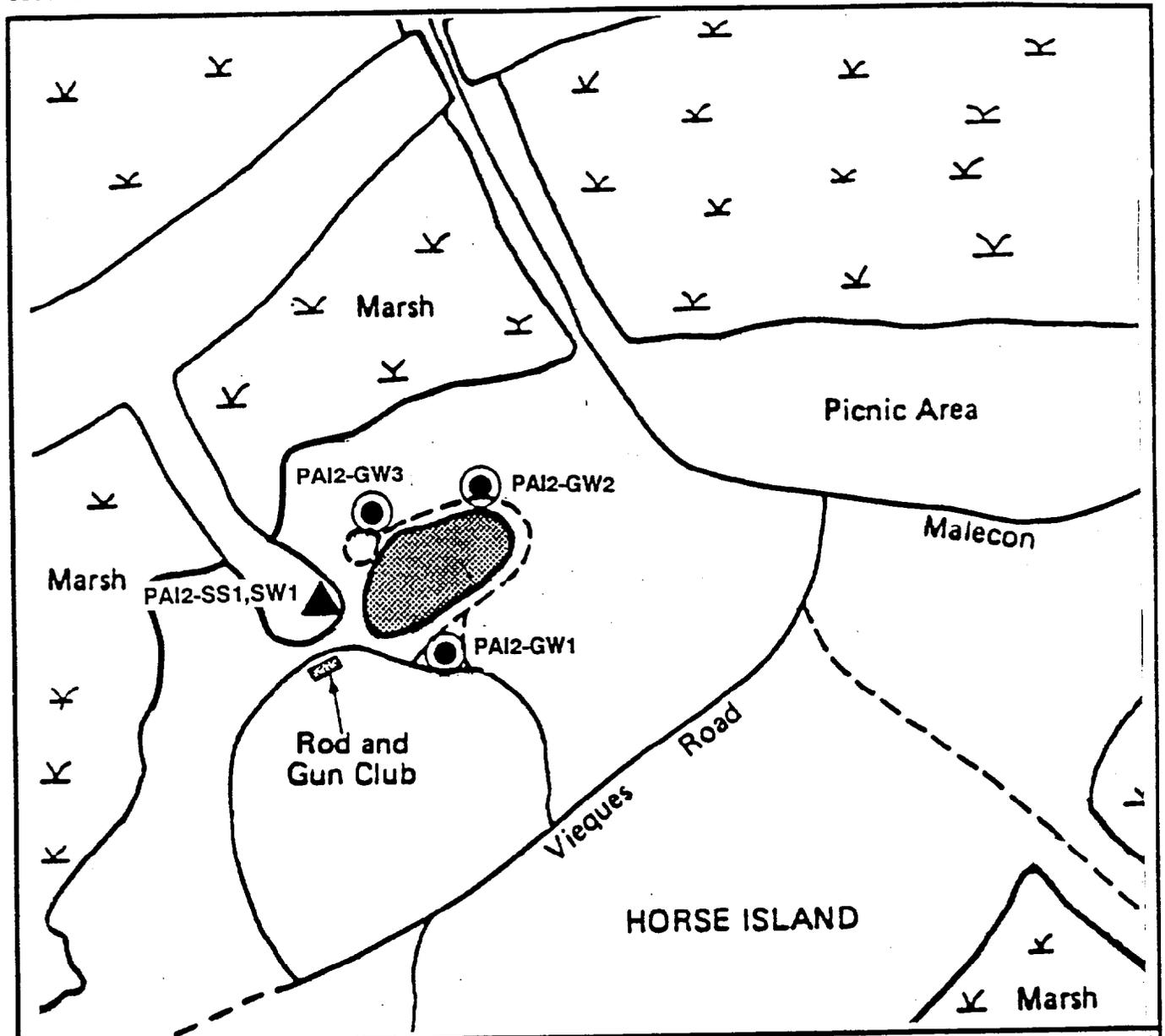
EXPLANATION:

- PAI1-GW4 ● Monitoring well/groundwater sample
- PAI1-GW3 ⊕ Temporary piezometer/groundwater sample
- PAI1-SS3 ▲ Surface sediment samples
-  Site
-  Structure

(modified from surveyor's notes)

FIGURE 2
SAMPLING LOCATIONS AT SITE 1





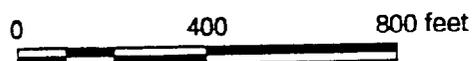
EXPLANATION:

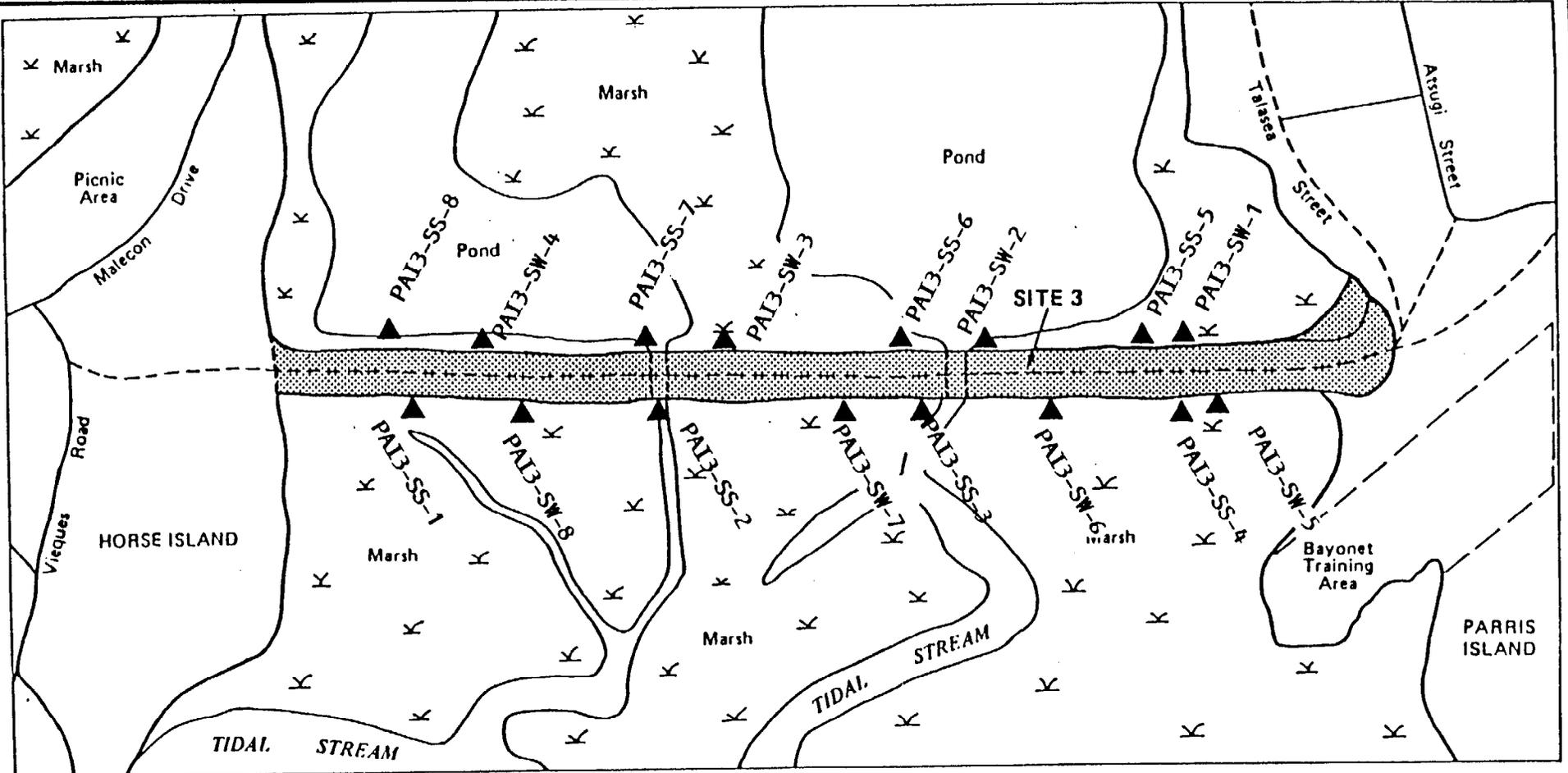
- Monitoring well/groundwater sample
- ▲ Surface water and sediment samples
- Site
- Structure
- Dirt Road

(modified from IAS reports)



FIGURE 3
SAMPLING LOCATIONS AT SITE 2



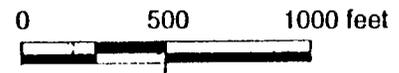


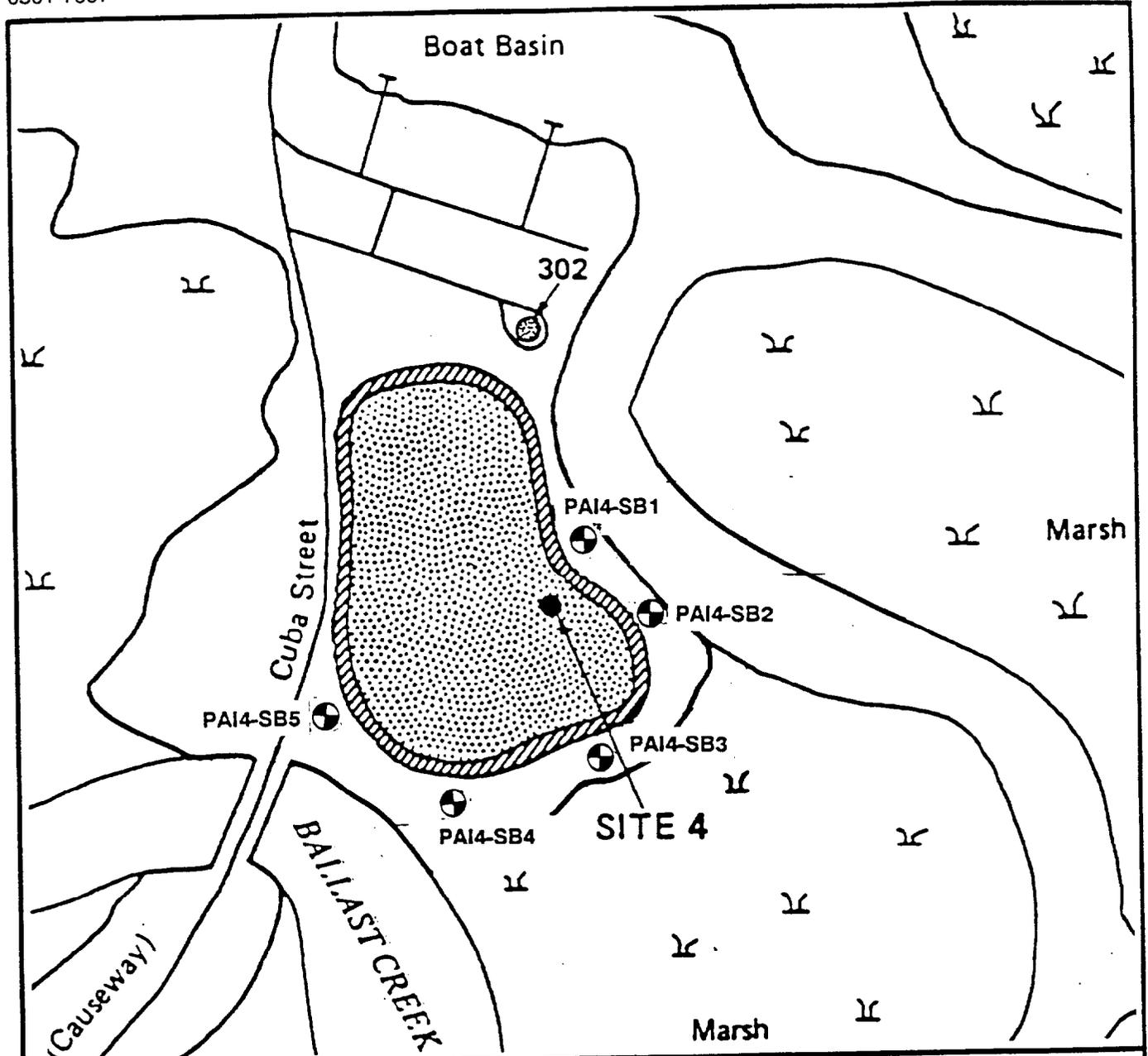
EXPLANATION:

- ▲ Seep/surface water and causeway sediment sample
- Site
- - - Dirt Road

Note: These are approximate locations.

FIGURE 4
SAMPLING LOCATIONS AT SITE 3



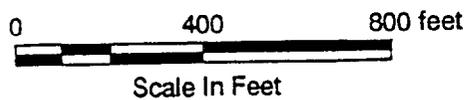


EXPLANATION:

-  Soil boring
-  Dredge Spoils Area
-  Spoils Area Berm
-  Structure
-  Site



FIGURE 5
SAMPLING LOCATIONS AT SITE 4



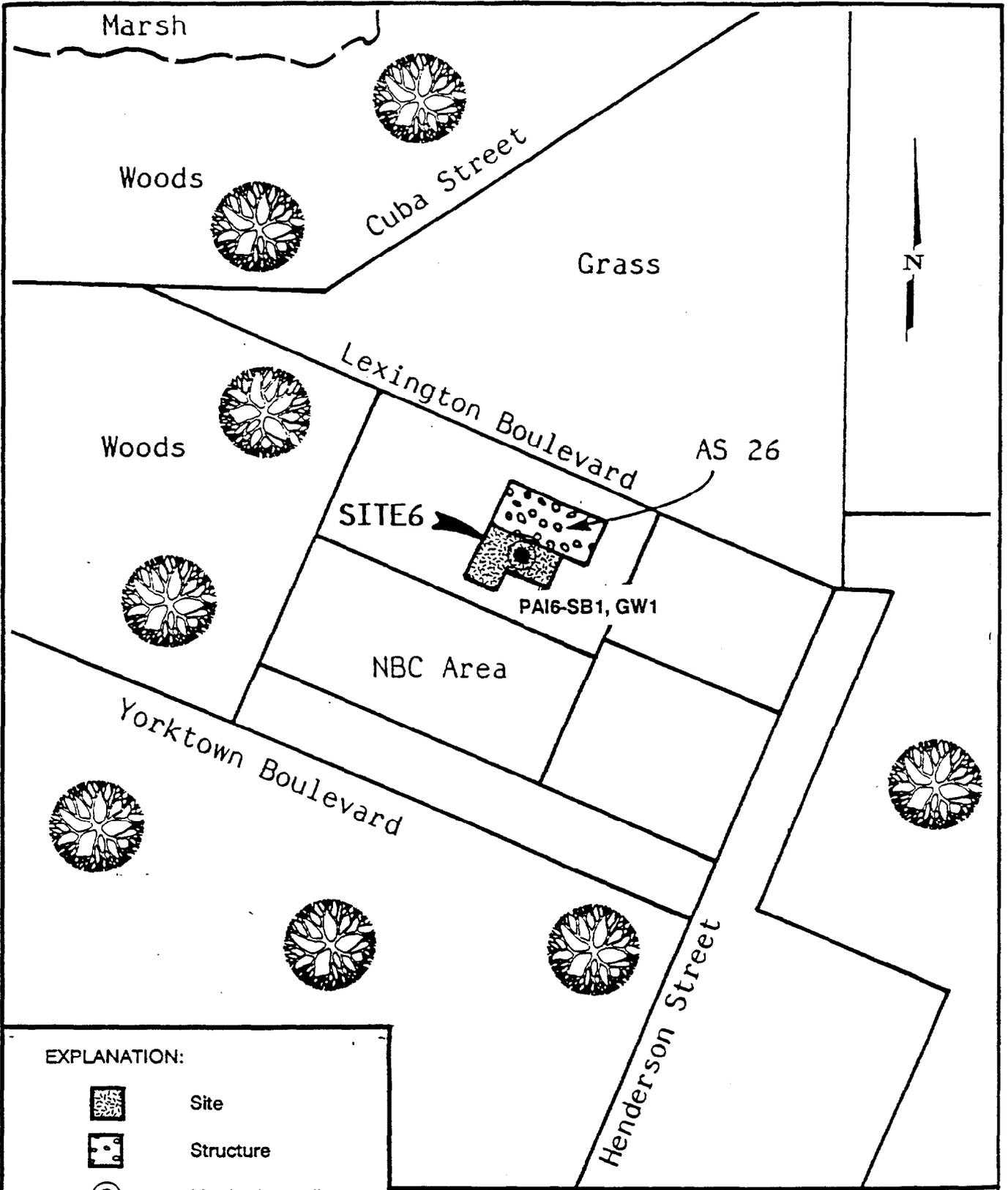
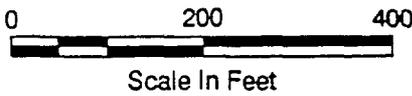
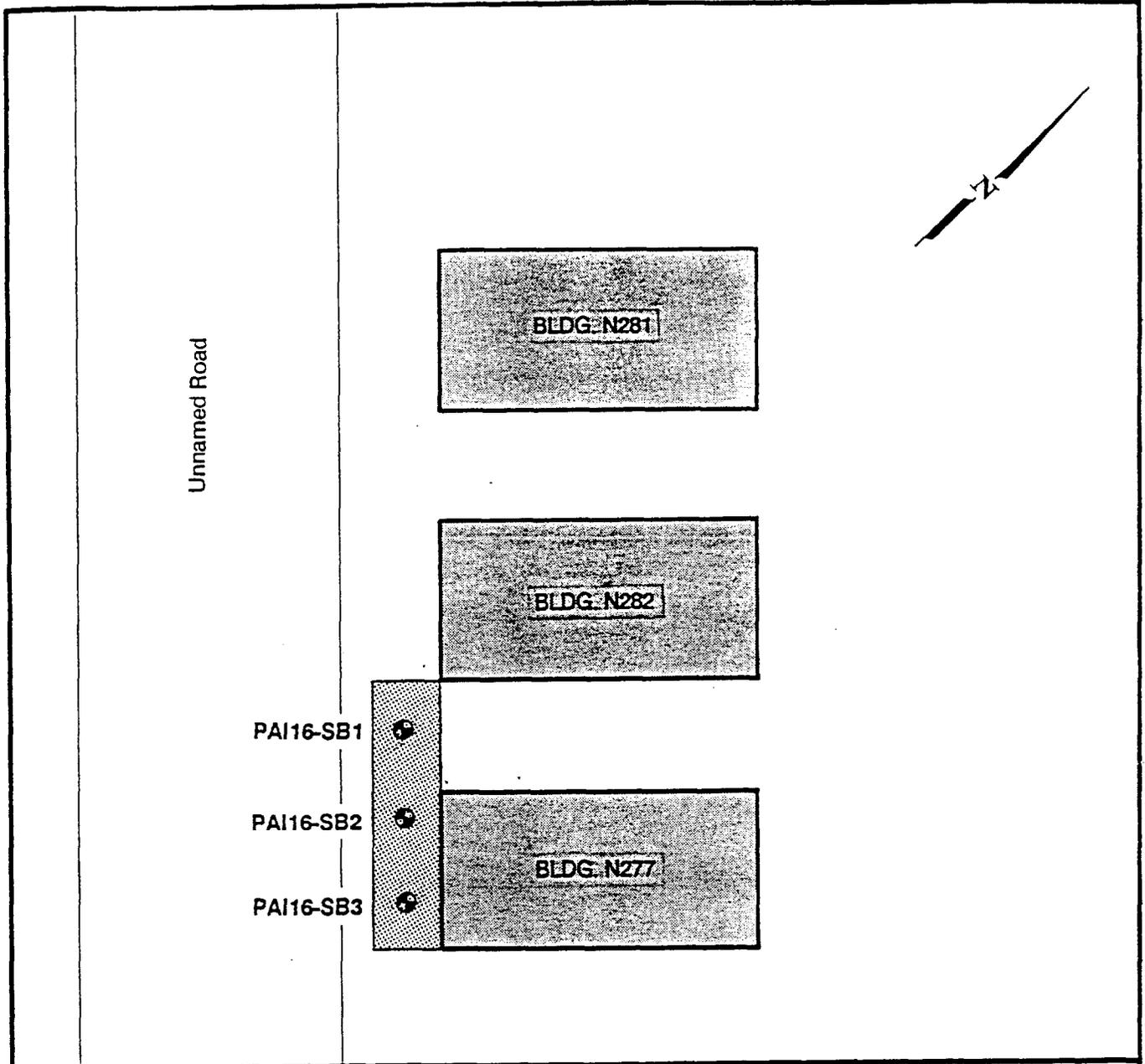


FIGURE 6
SAMPLING LOCATIONS AT SITE 6





EXPLANATION:



Site



Structure

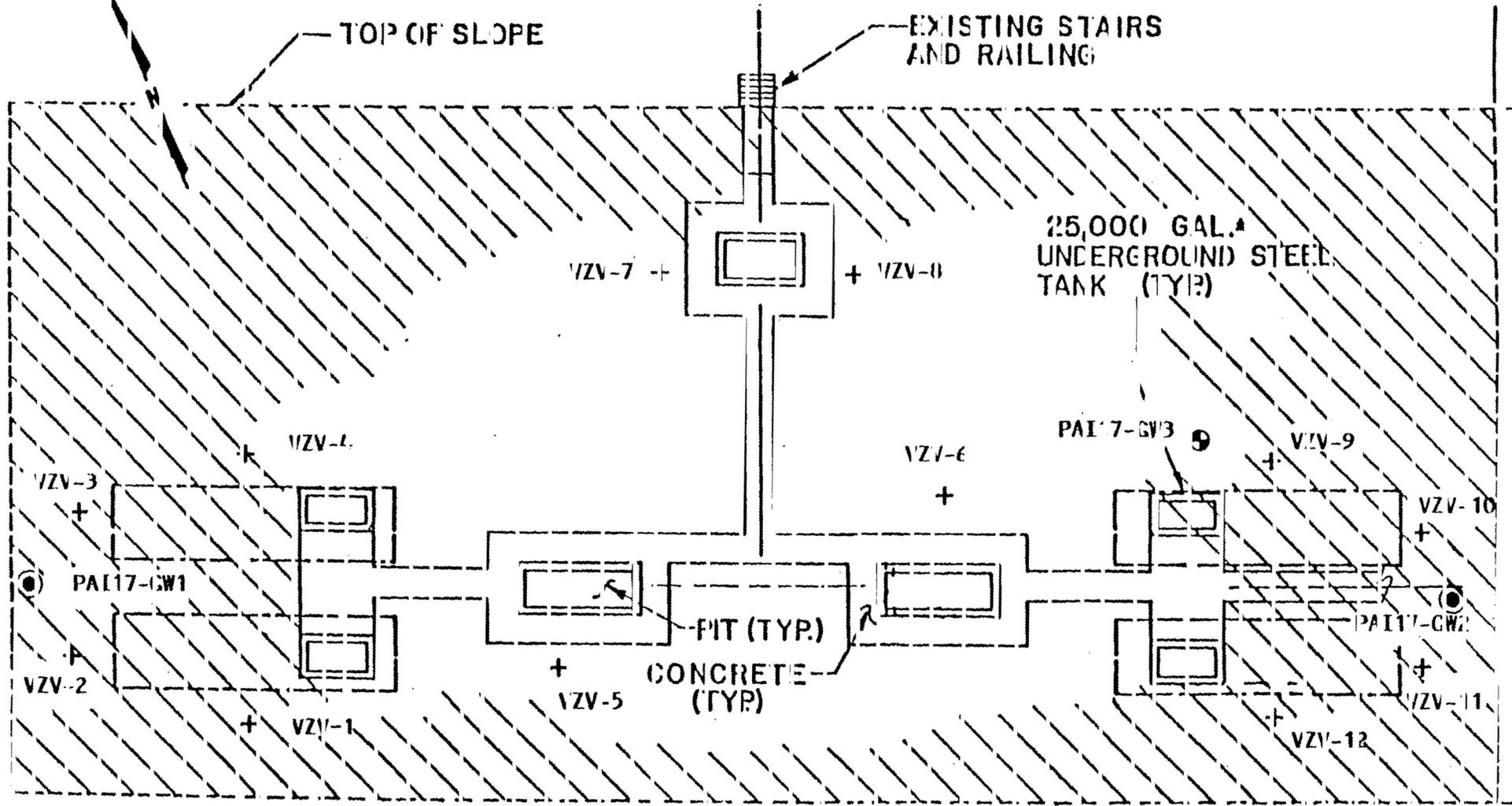


Soil boring

(modified from IAS report)

FIGURE 7
SAMPLING LOCATIONS AT SITE 16

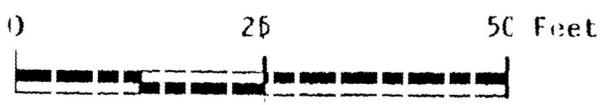




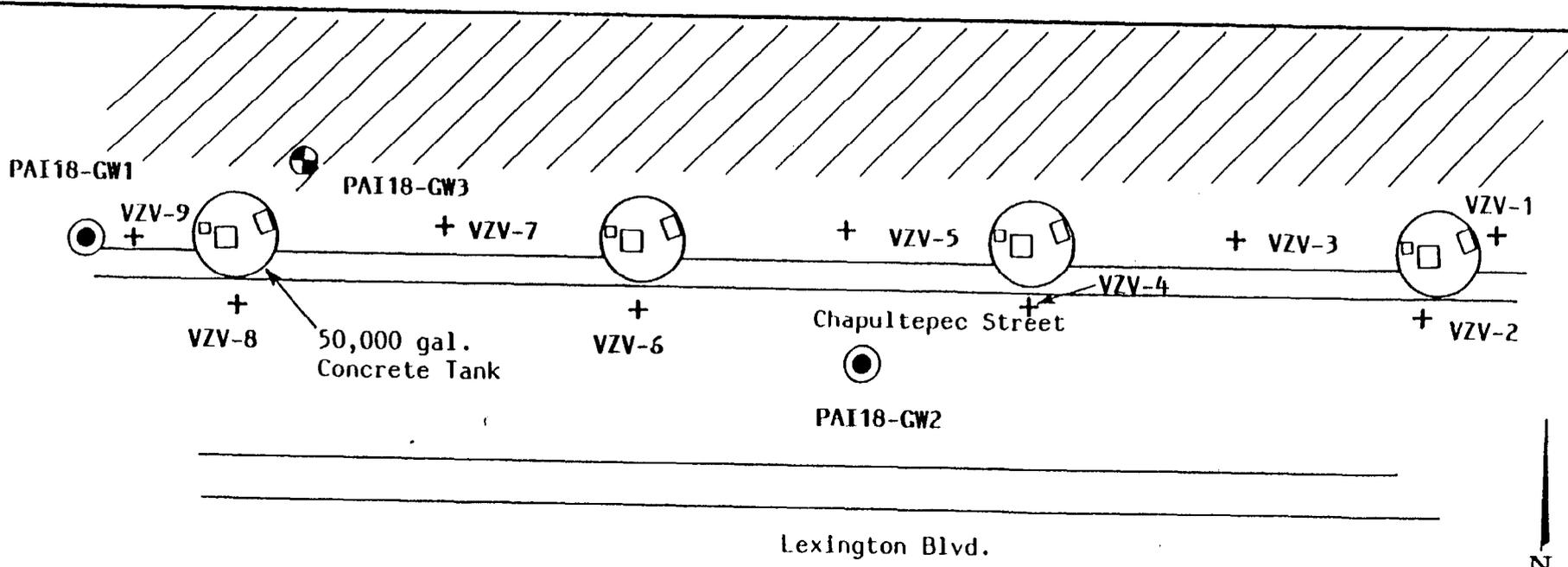
EXPLANATION:

- (D) Existing monitoring well, installed by previous contractor
- (D) Monitoring well
- + VZV probe location

FIGURE E
SAMPLING LOCATIONS AT SITE 17



EDGE OF EMBANKMENT (TOP OF SLOPE)

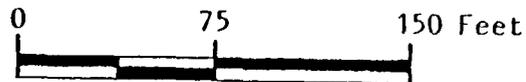


EXPLANATION:

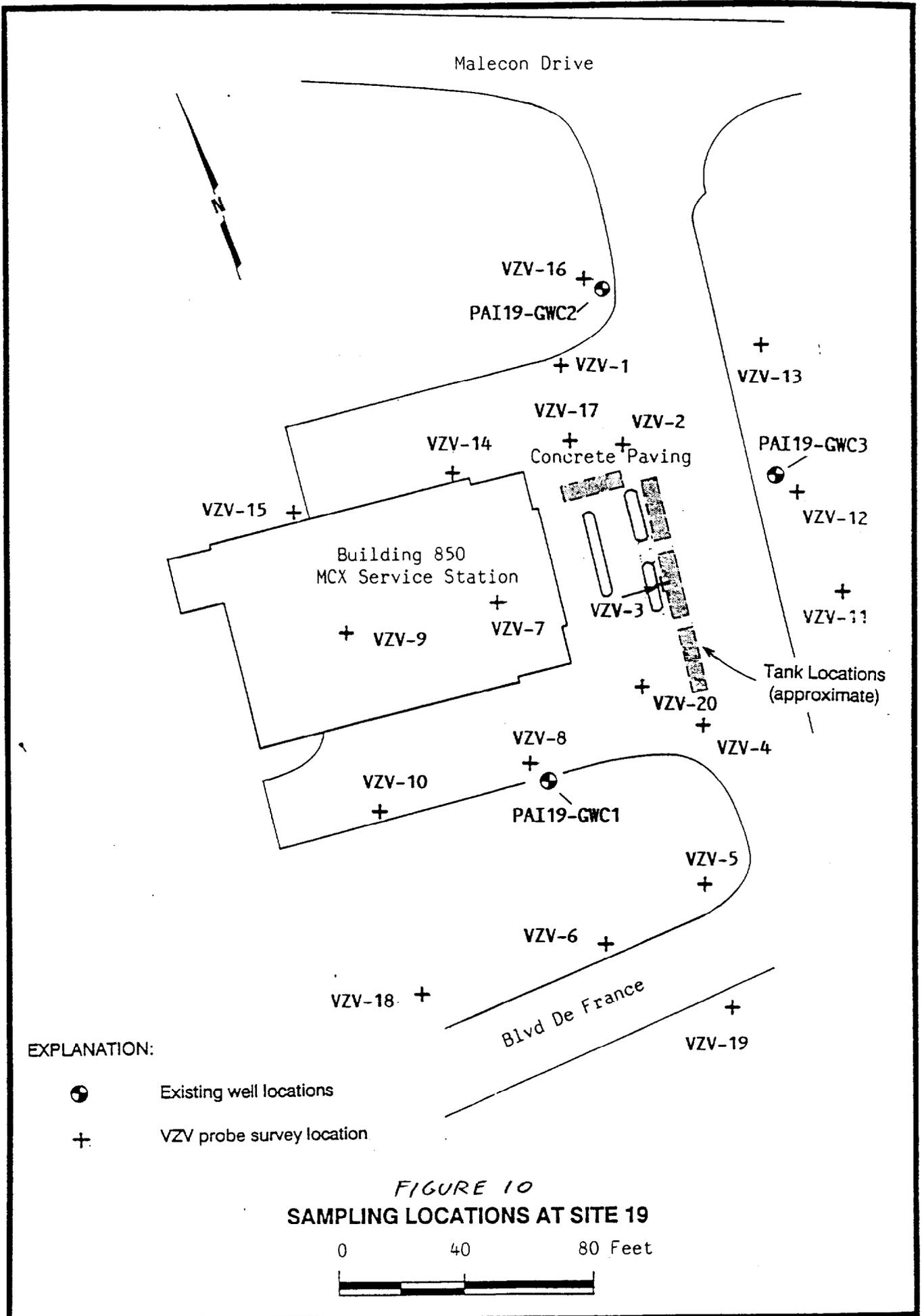
-  Area Inaccessible to VZV Probe equipment
- PAI18-GW3  Existing monitoring well, installed by previous contractor
- PAI18-GW1  Monitoring well
- VZV-6  VZV Probe location

(modified from MCRD engineering drawings)

FIGURE 9
SAMPLING LOCATIONS AT SITE 18



Drafted : Date : Checked : Date : Approved : Date : Form DF 1-1.00 (12/81) Job No



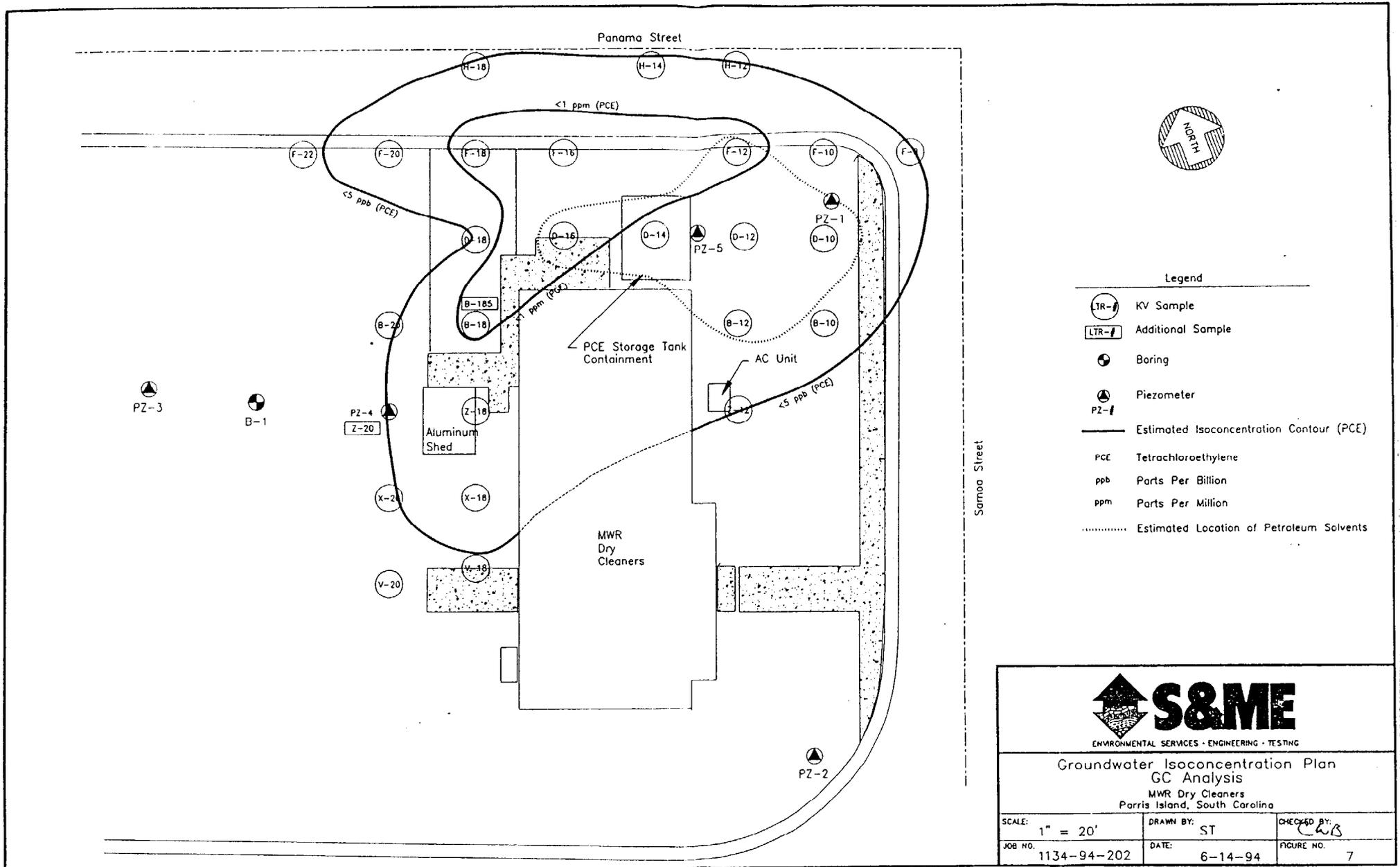


FIGURE 11
 SAMPLE LOCATIONS AT SITE 45 (PROPOSED)