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NWS EARLE  
5090.3a

**State of New Jersey**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
DIVISION OF WASTE MANAGEMENT  
HAZARDOUS SITE MITIGATION ADMINISTRATION  
CN 028, Trenton, N.J. 08625

25 NOV 1985

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Enforcement & Compliance Branch  
United States Environmental Protection Agency  
Room 711  
26 Federal Plaza  
New York, New York 10278

21 NOV 1985

RE: Naval Weapons Station Earle Health/Safety Plan and POAM by Weston

Dear Ms. Karas:

The following are the comments generated by the New Jersey Department of Environmental Protection after the review of the workplan by Weston for Naval Weapons Station Earle.

SECTION 2 - Confirmation Study

2.0 Introduction

"This study focuses on the first phase of the program, which consists of step I (A) Verification and step I (B) Characterization."

This study does not adequately meet the goals of step I (A). The report presents too many unknowns at the site for the sampling which is proposed, and no justification for its recommendations.

2.1 Scope Of Work

In both this section and the previous section there should be rewording to emphasize the fact that evaluation of these eleven sites does not preclude investigation of the remaining eighteen sites. The scope of work should be phrased to convey that this is a screening of the initial eleven sites, and that further investigation will follow.

Item 3 - Sentence should be reworded as follows: "Collect soil, surface water and sediment samples from streams, marshes and ponds in proximity to any site."

Item 4 - Specify what "regular intervals" are.

figure 4 - Site Locations - Site 22 is not indicated on the map, show its location.

2.2 1 Sites Not Investigated

Include in first paragraph the statement that "these sites will be addressed at a later date."

#### 2.3.1.2 Site Reconnaissance

Explain what the reconnaissance entailed and the criteria and methods used for "Assessing" the site.

#### 2.3.2.1 Drilling

The number of wells presented for each site is inadequate. Additional wells are required. Please refer to site-specific comments.

The number of stainless steel wells proposed is not clear. It is indeterminable as to whether there will be two stainless steel wells per site or two, total, out of the thirty-one installed. It is recommended that all wells be constructed of stainless steel since organic chemicals and corrosives may affect PVC casings. If this can not be done, at a minimum, one (1) stainless steel well should be installed at each of the eleven sites.

Last sentence of second paragraph should be reworded. Its meaning is unclear.

#### 2.3.2.2 Ground Water

Wells should be allowed to settle at least one week prior to sampling.

#### 2.3.2.4. Soil Sampling

Soil boring samples should be taken at two to five (2-5) foot intervals to a depth of approximately ten (10) feet and just above the water table.

#### 2.3.2.5 Surveying

Well elevations are to be measured on the inner casing and not, as is stated in this section, on the protective casing.

#### 2.3.3 Evaluation and Report

All data generated during the field investigation or used to establish geology and hydrogeology of the study area must be presented.

The EIC should forward progress reviews and evaluations to the NJDEP and USEPA for review.

Table 2-4 is referenced in second to last paragraph. This should be table 2-1

Additional investigations that should be performed are:

Aerial Photography - EPA, EPIC has prepared a historical analysis of NWS Earle. This report should be obtained and utilized for determining sampling locations, waste disposal practices and site boundaries. Signs of vegetative stress, leachate seeps, etc., should be recorded and indicated on site maps. These indications may prove useful when siting sampling locations,

Radiation Survey - In order to monitor any radiation levels above background, a general radiation survey should be conducted.

### SECTION 3 - Site Investigation

The site maps which serve as attachments to the individual site listings are completely inadequate. No scales are provided and the representations are so

simplistic in nature that the sampling and well locations are not representative. Maps to are to include the following:

- Diagrams with structures drawn to scale
- Scale of Diagrams
- Direction of groundwater
- Direction of stream or river flow
- Topographic Maps

#### Site 2 - Ordinance Demilitarization

This site has been described as an eleven (11) acre site in which approximately 80,000 pounds of explosives and propellents have been disposed of. The proposed investigation consisting of four monitoring wells, three soil samples, and two surface water and sediment samples is inadequate to determine potential groundwater contamination. A combination of wells and peizometers have been recommended as in Figure 1. The six monitoring wells and three peizometers determine the site's groundwater quality and will validate (or invalidate) the assumptions of groundwater flow. There should be a minimum of five (5) composite soil samples taken from the site: one from the detonation area as was suggested, and the remaining circular area broken into quadrants for four (4) more composite samples. Rationale should be provided for sampling suggested. Refer to Figure 1. Stream direction should be indicated on the map and the two samples taken should be located upstream and downstream, respectively.

#### Site 3 - Landfill

Two wells should be included as shown in Figure 2, and placement should occur as indicated.

#### Site 4 - Landfill

Please refer to figure 3. Two wells are to be added.

#### Site 5 - Landfill

Three monitoring wells should be added. Refer to Figure 4.

#### Site 7 - Landfill

Map is missing. One surface water sample, upgradient and one surface water sample down gradient should be taken.

#### Site 10 - Scrap Metal Landfill

Two monitoring wells are to be added as indicated in Figure 5, as well as two peizometers in the position shown.

#### Site 11 - Contract Ordinance Disposal Area

Add one well as indicated in the southwest quadrant of the site.

#### Site 19 - Paint Chip and Sludge Disposal Area

Please refer to Figure 7.

#### Site 20 - Grit Blasting Area

Refer to Figure 8

#### Site 22 - Paint Chip Disposal Area

Refer to Figure 9

#### Site 26 - Explosive Wash out Area

Map is missing two composite soil samples should be taken within the settling basins and analyzed for ph, Chloride, Nitrite/Nitrate, Acid Extractable/Base Neutral Compounds, and Picric Acid.

#### Sampling Parameters

Background information indicates similarities between the wastes deposited at the various sites. However, Weston sampling plan as described in Table 3-2 and 5-2, does not maintain consistency of sampling parameters for all the sites.

#### Suggested Changes to Sampling Parameters - See Tables 3-2 and 5-2

Note that the changes indicated below do not reflect all site sampling additions or deletions due to changes in the scope of monitor wells, borings, etc. Furthermore, two (2) rounds of sampling and analysis of aqueous samples are needed to obtain valid overall data for the confirmation study.

- 1) EP Toxicity test should not be used on sites 20 and 22. Replace this test with priority pollutant metals test.
- 2) Delete oil/grease sampling for Site 11 and perform the analysis for Petroleum hydrocarbons in its place.
- 3) Add one (1) pesticide sample at Site 10 - Scrap Metal Landfill near building S-589. It is possible that metal containers disposed of at this site contained pesticides.
- 4) Priority pollutants (+40) analysis should be performed at sites 20, 22 and 26.
- 5) Add Base/Neutral and Acid extractable compounds for all ground water and surface water samples at sites 20, 22 and 26.
- 6) Perform analysis of ground water and soils for analytes RDX, HMX, TNT, Ng and Picric acid at the following sites; 3,4,5,7,10,11,19,20,22,26.

#### Monitor Wells

Weston should present more accurate specifications on the depths of monitor wells and their screening levels. Reference to Fred C. Hart's Initial Assessment Study will be helpful in this regard. Consideration also should be given to installation of deeper monitor wells if contamination is found in shallow wells.

### SECTION 4 Drilling Methods

#### 4.1 Drilling Specifications

The use of an air rotary drill rig on these sites is not recommended. It will interfere with volatile analyses and increase the explosive hazard.

Split spoon samples should be taken at five foot intervals and at changes in soil type in all monitor wells.

The report does not indicate the criteria to be used by the Weston Field geologist to determine final completion depths.

#### 4.2 Drilling Procedures

1. All decontamination should occur prior to set-up at the new location.

7) Revert is not an acceptable drilling fluid additive.

#### 4.8 Monitor Well Construction

Twenty feet of screen is to be placed in each monitoring well with five (6) feet above and fifteen (15) feet of screen below the water table.

#### 4.4 Decontamination Procedures

The decontamination method proposed for all drilling equipment is acceptable (steam cleaning). However, for the sampling equipment the following method must be used at all sites:

- Alconox scrub
- water rinse
- acetone rinse
- air dry
- distilled/deionized water rinse

For sites 2 and 11 equipment may be rinsed with an acetone solution and a hexax solution, as proposed, before the final rinse. Containerization and disposal of rinse water is acceptable as planned.

### SECTION 5 - SAMPLING PROGRAM

#### 5.2 Ground Water Sampling

Prior to placing any equipment into the well the equipment must be decontaminated following the method outlined herein. All pumps, water level indicators, bailers and their teflon cords, and additional equipment must be scrupulously cleaned before and after its use in groundwater monitoring.

### SECTION 5 - SAMPLING PROGRAM

#### 5.5 Quality Assurance

Water used for trip and field blank analysis must be demonstrated analyte-free and should originate from the lab performing the analysis. The field blank water should be poured over or through the sampler (bailer, split spoons, etc.) and collected into the clean bottle.

The frequency of trip and field blank and duplicate sample collection is unclear as it is presented in table 5-2. One (1) trip and one (1) field blank should be included for each day's sampling, for each matrix sampled. Duplicates should be collected at a rate of not less than one (1) duplicate per 20 samples taken per matrix.

Unexpected results encountered, with respect to quality assurance samples, are to be investigated as specified in the document. "If an adequate and acceptable

explanation for the results cannot be obtained then appropriate corrective action is identified and taken." It would be helpful to know what corrective action may be anticipated. (i.e. sampling)

General

Although the New Jersey Department of Environmental Protection has reviewed this document to the best of its ability, the overall quality of the work was poor. As was indicated, maps were too simplistic and, in some cases, missing altogether. Weston should have delineated the criteria for the selected sampling strategies which might have explained the vague diagrams. As it is written, sampling appears haphazard instead of based on known or suspected site characteristics. The sampling scheme proposed by the NJDEP is based on the suspected flow of groundwater in the area, with peizometers added to verify the assumptions.

For your information, the monthly enforcement meeting that was originally scheduled for November 13, 1985 has been rescheduled for December 6, 1985. Both this document, and the department's comments on the Federal Facilities Agreement will be discussed.

Also, this case has been reassigned to Mr. Frank Groman. Although I will attend the December 6, 1985 meeting, Mr. Groman will gradually be assuming my responsibilities on the case. He can be reached at 609-984-3074.

Please call me if you have any questions.

Sincerely,



Beth I. Muhler, Site Manager  
Bureau of Site Management

HS40:kk

c: T. Farro  
R. Predale  
J. Schnitzer  
E. Evenson  
J. Renella  
F. Groman

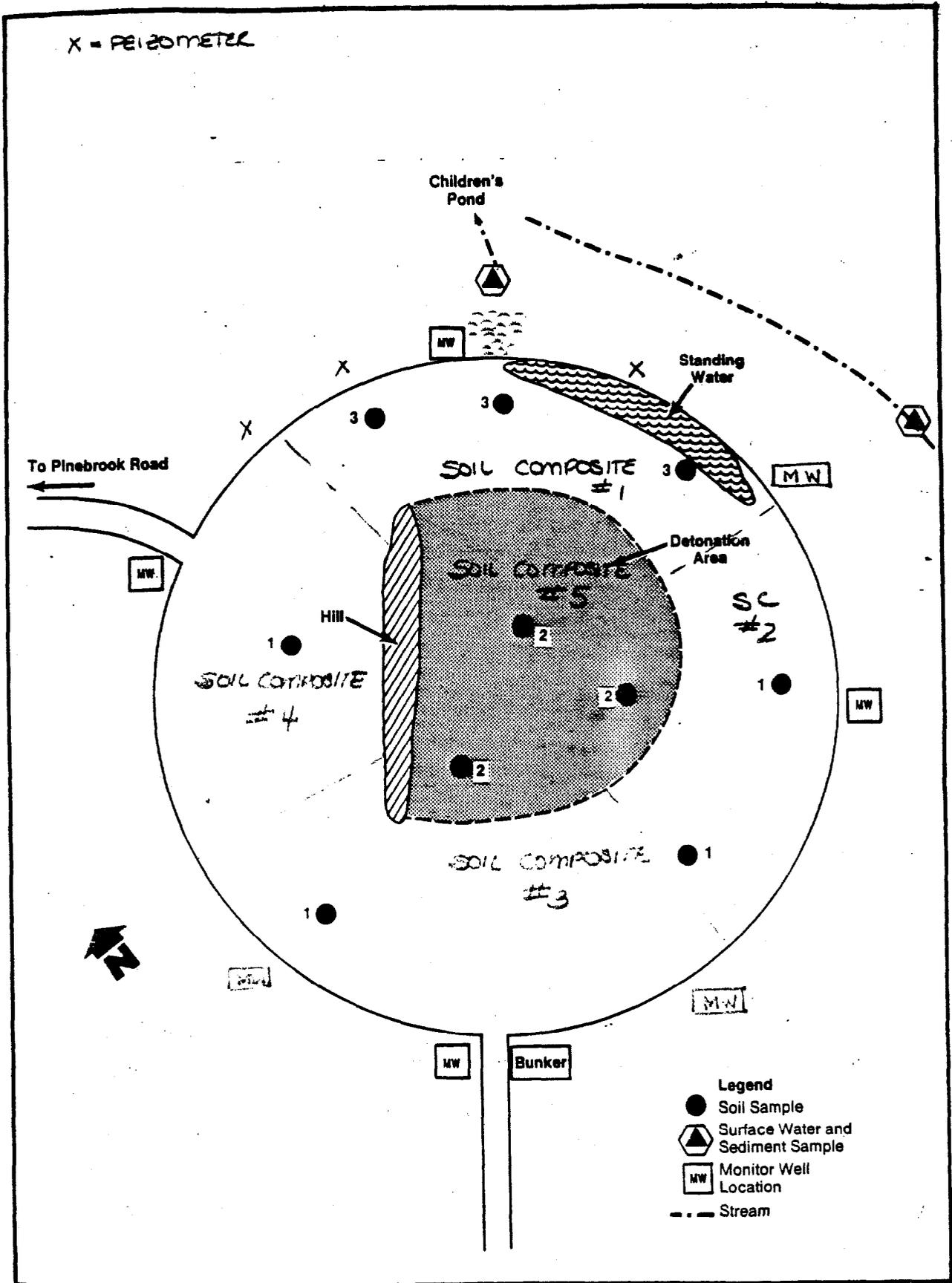


FIGURE 5 SITE 2 - ORDNANCE DEMILITARIZATION SITE

FIG 1

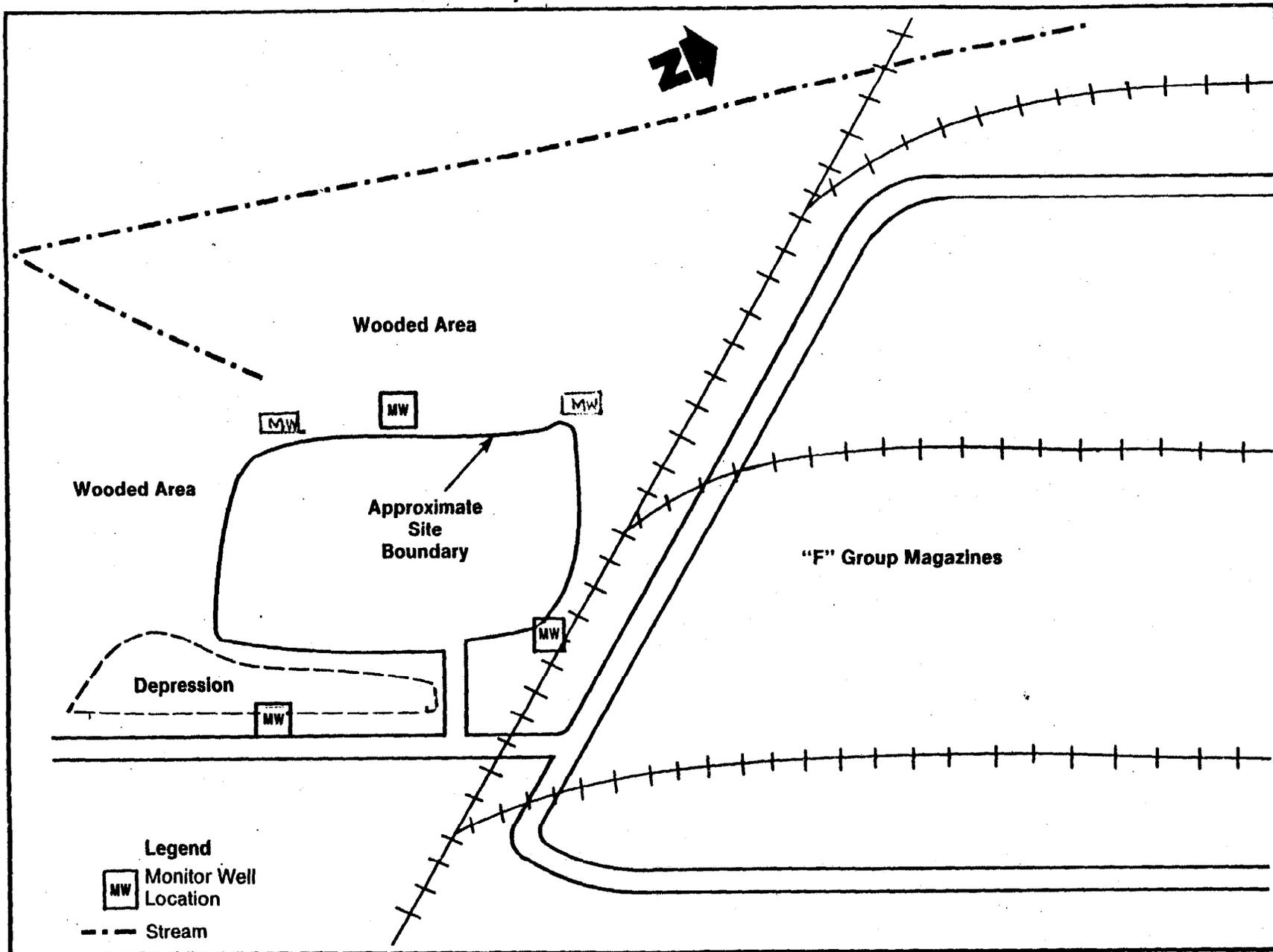


FIGURE 6 SITE 3 - LANDFILL SOUTHWEST OF "F" GROUP

FIG 2

WESTON

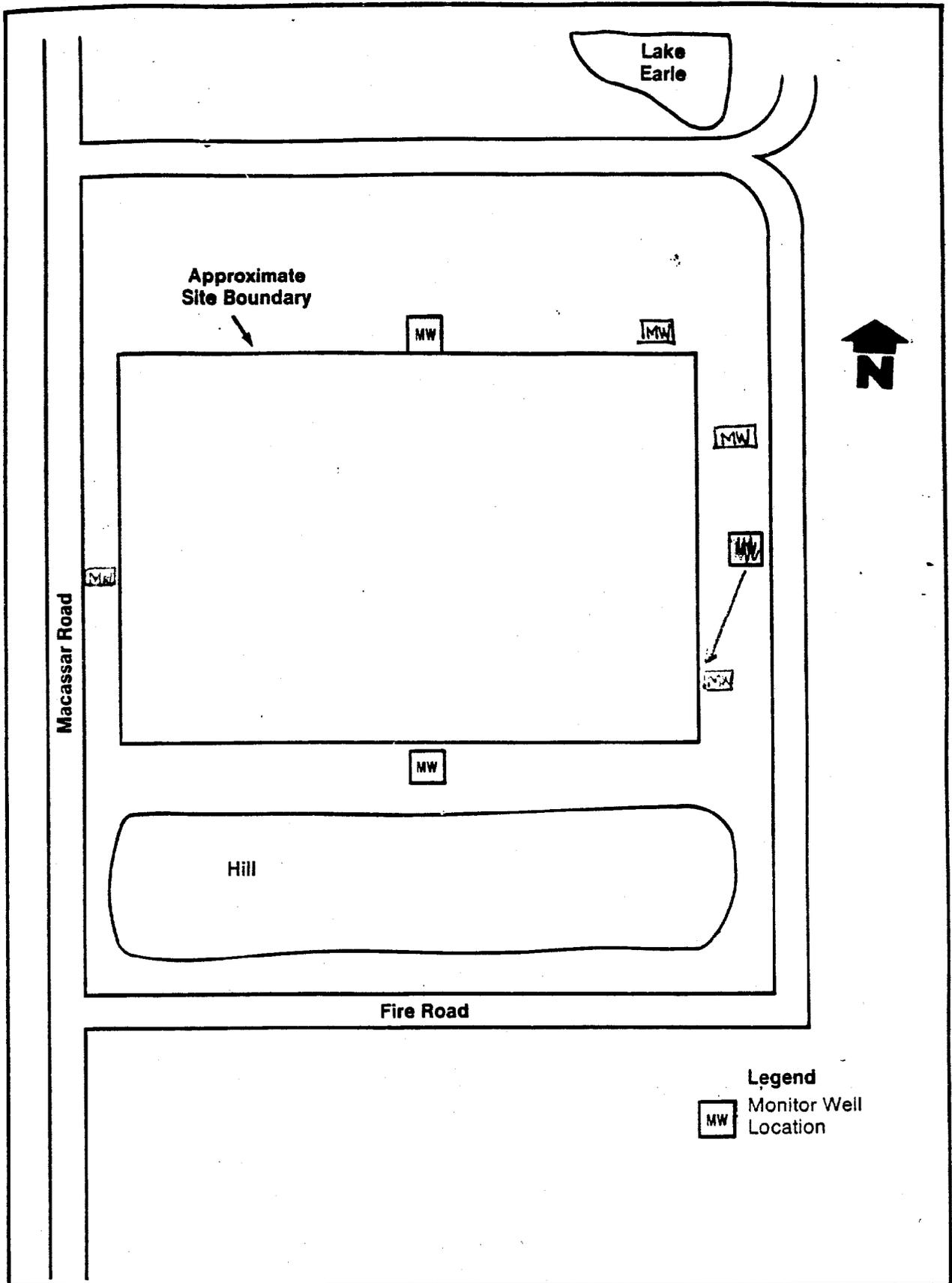
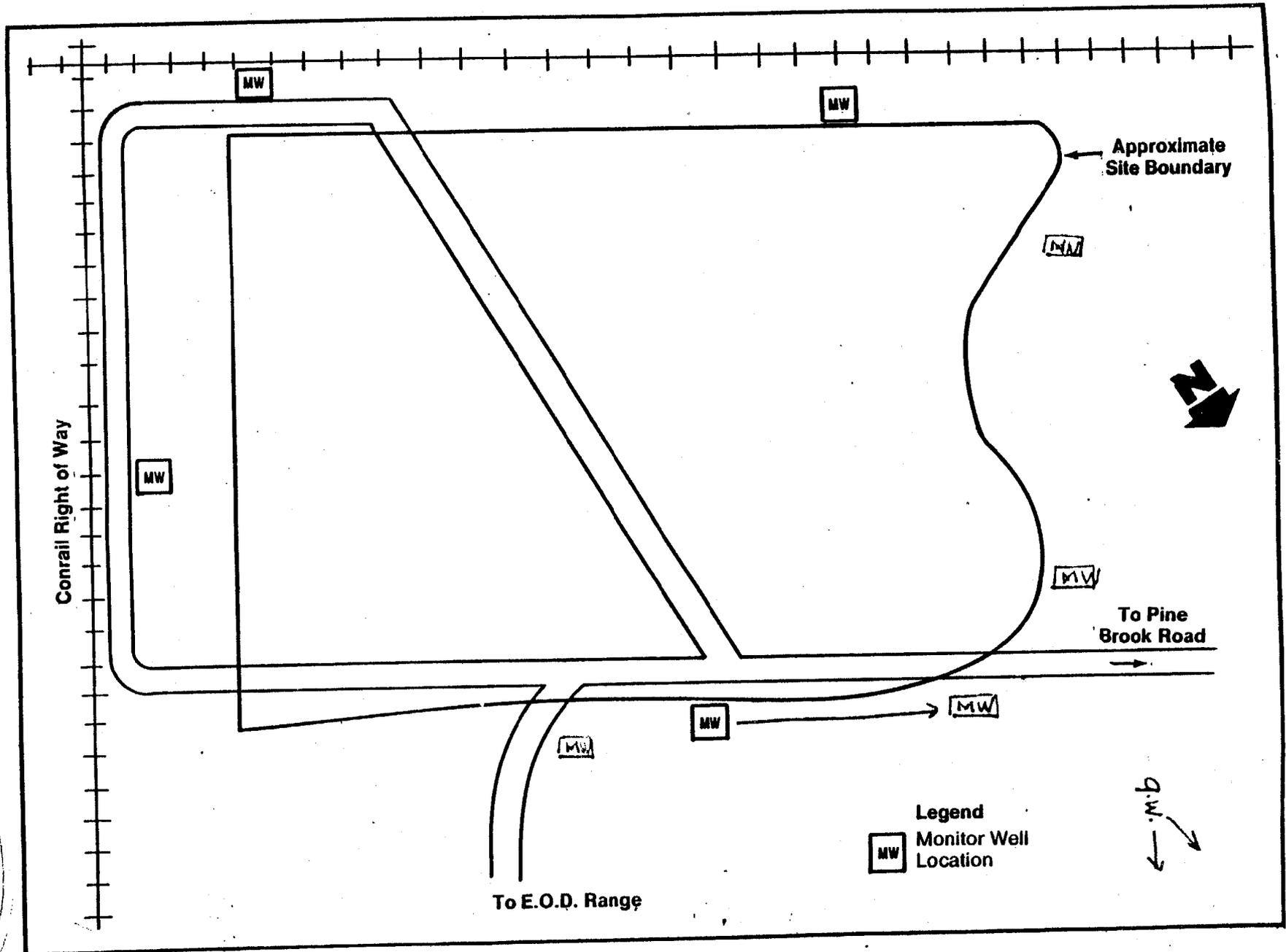


FIGURE 7 SITE 4 LANDFILL WEST OF "D" GROUP

FIG 3

FIG 4



WESTON

FIGURE 8 SITE 5 - LANDFILL WEST OF ARMY BARRICADES

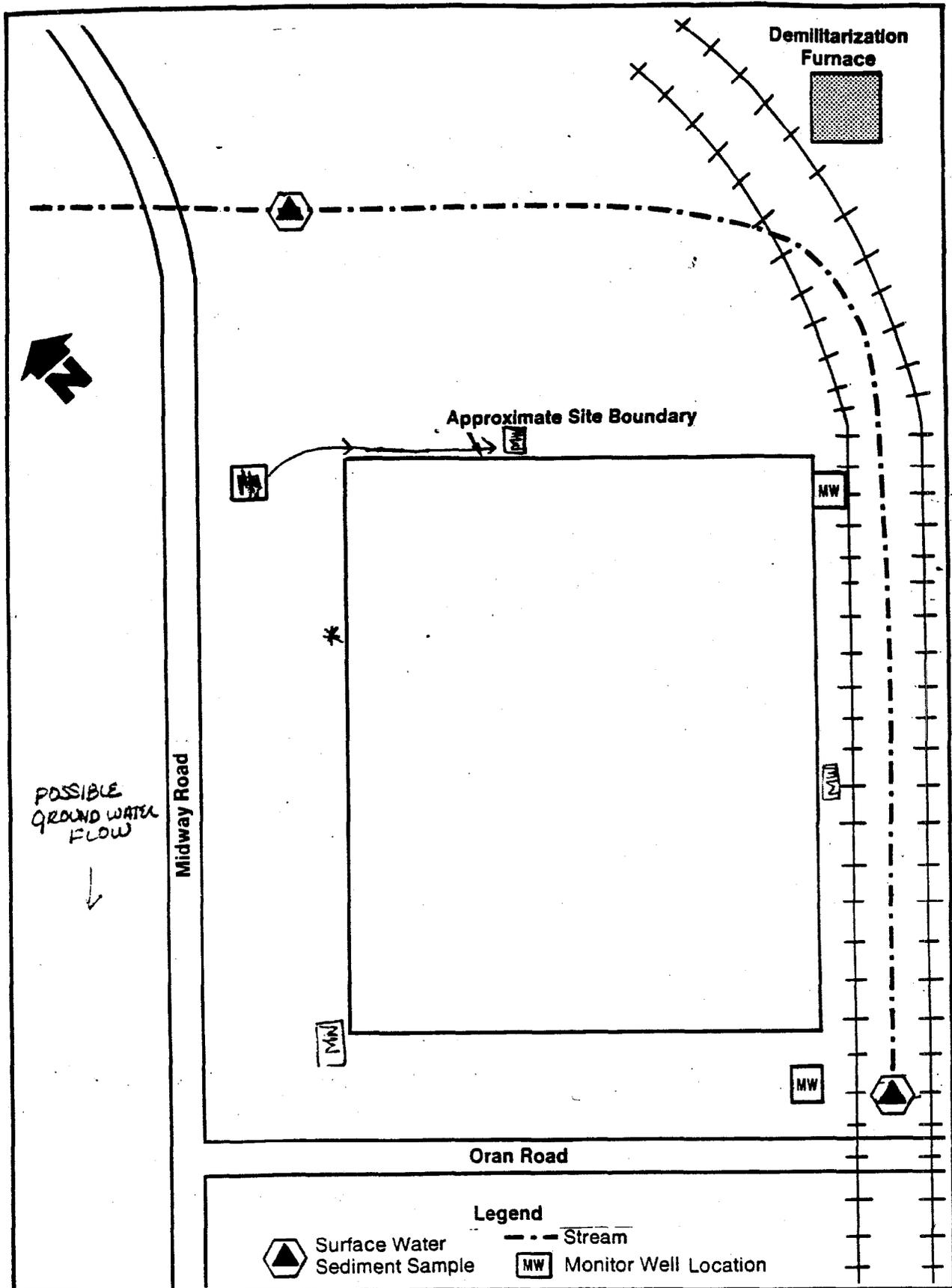
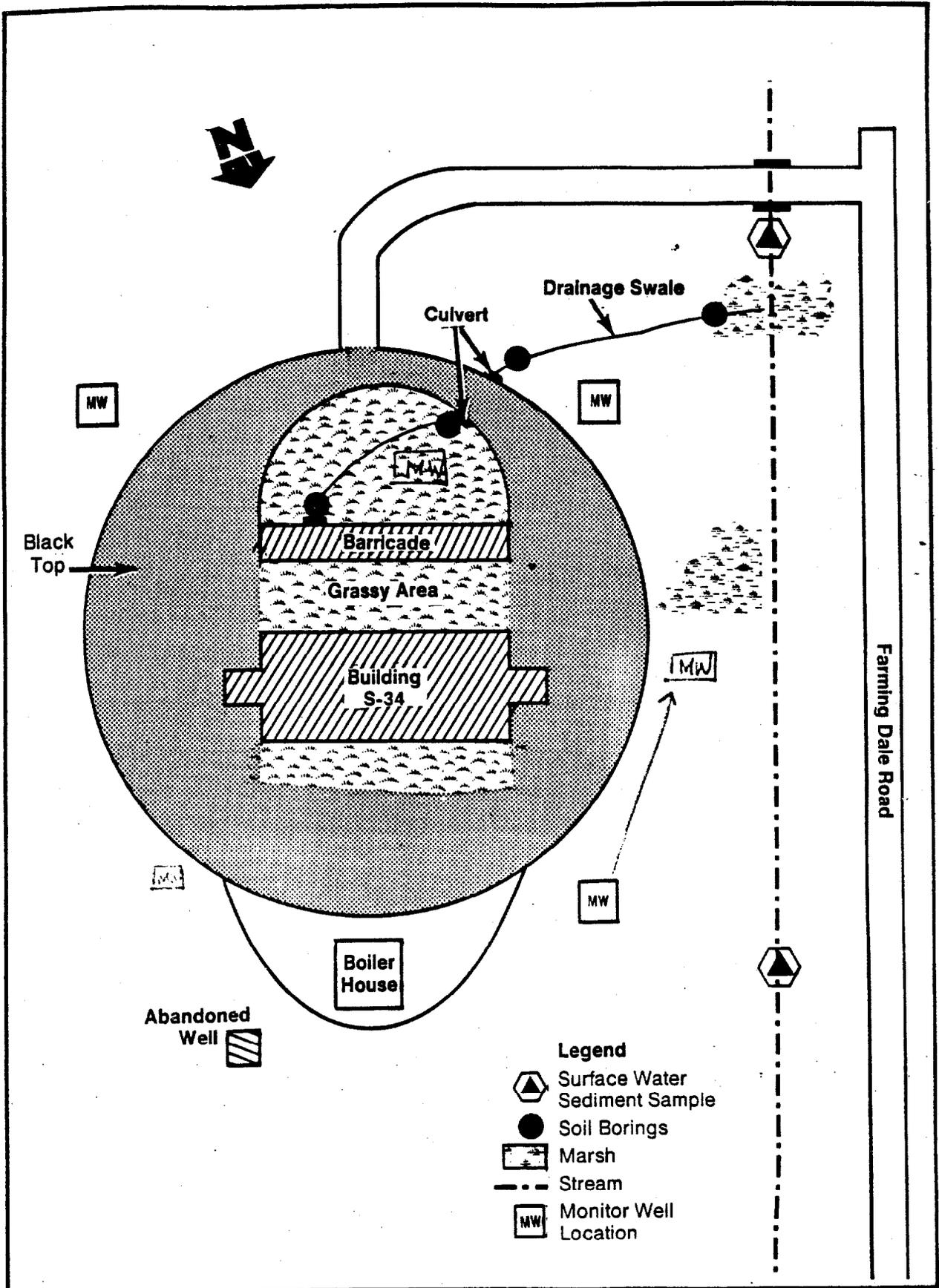


FIGURE 9 SITE 10 - SCRAP METAL LANDFILL

FIG 9



**FIGURE 11 SITE 19 - PAINT CHIP AND SLUDGE DISPOSAL AREA**

FIG 7

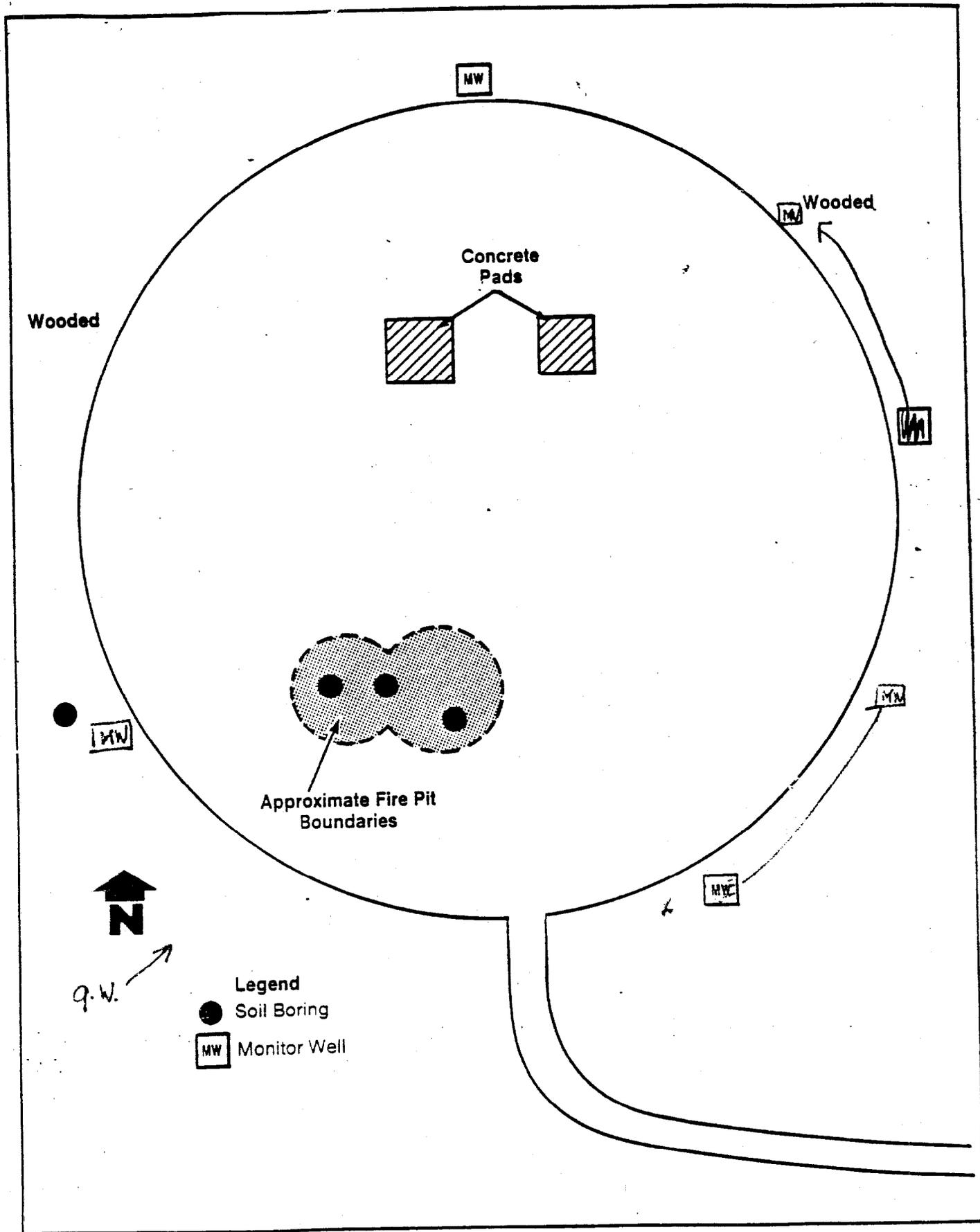


FIGURE 10 SITE 11 CONTRACT ORDINANCE DISPOSAL AREA

\* = PERIMETER

Flg 6

3-16

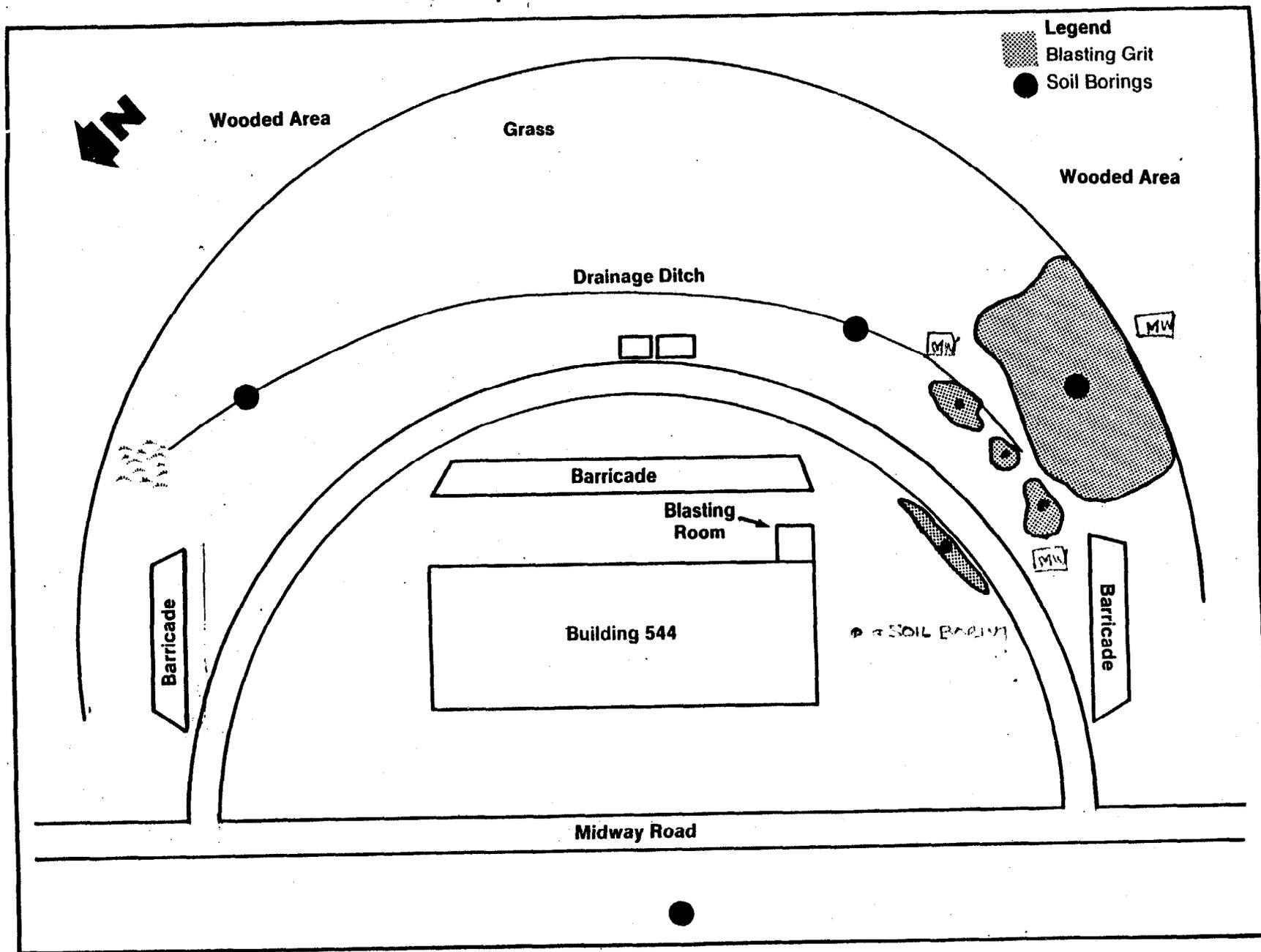


FIGURE 12 SITE 20 - GRIT BLASTING AREA AT BUILDING 544

Fig 8

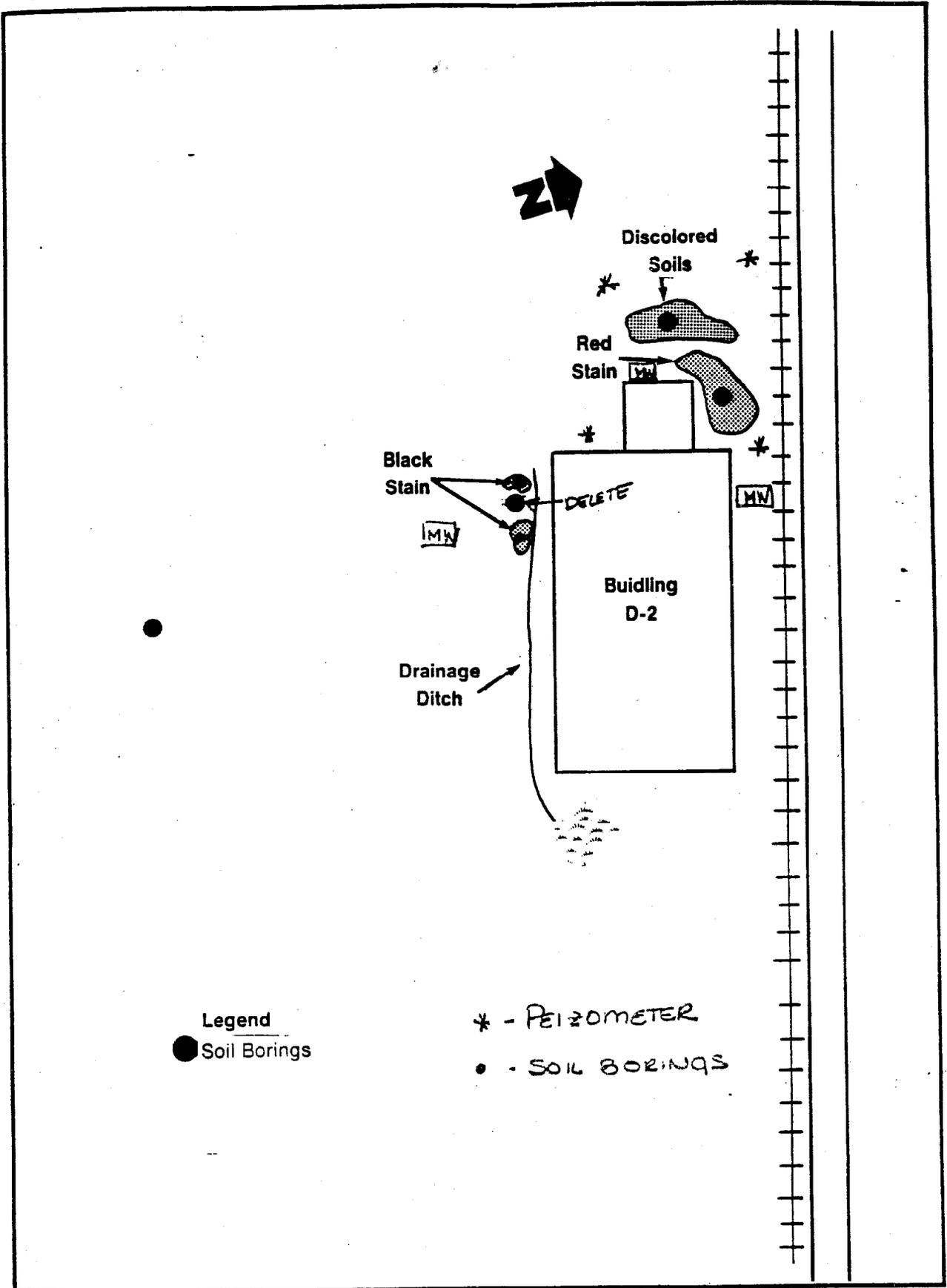


FIGURE 13 SITE 22 - PAINT CHIP DISPOSAL AREA

Fig 9

\* = PIEZOMETER