

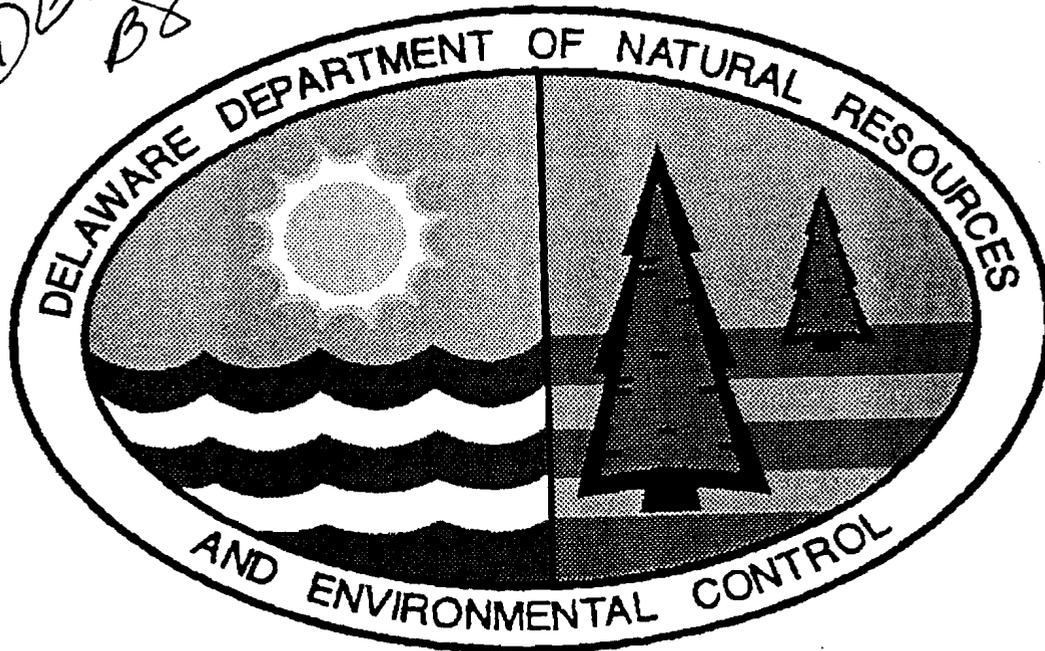
Proposed Plan of Remedial Action

400 S. Madison Street Site
South Wilmington, DE

SCANNED

JUL 12 1999

DE 1040
B8



September 1995

Prepared by:
Department of Natural Resources and Environmental Control
Division of Air and Waste Management
Superfund Branch

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Proposed Plan of Remedial Action 400 S. Madison Street Site

Summary

In July, 1995, the Superfund Branch of the Department of Natural Resources and Environmental Control (the Department) was requested to perform a document review of the 400 S. Madison Street site in South Wilmington. Included in the document review were the Phase I and Phase II Environmental Assessment (EA) reports completed by Tetra Tech, Inc., for the site, as well as a Freedom of Information Act (FOIA) addendum containing numerous other documents and reports regarding the 400 S. Madison Street site. Based on the review of the Phase I and II reports and prior investigations, the Department has determined that the 400 S. Madison Street site does not pose a significant threat to human health or the environment. The Department, therefore, recommends that no further action or investigation take place at the site, with the following provisions:

- A deed restriction is placed on the property limiting it to industrial/commercial use only;
- the deed restriction include provisions which limit excavation of the contaminated fill material or area of past remediation conducted by Pettinaro Associates; and
- the Department is contacted for approval before any excavation is performed should the owner/operator need to excavate beyond the clean fill area (the clean fill area shall be defined as the fill which exists above the concrete drainage way located to the north of the property (see Figure 2)).

Purpose

This Proposed Plan of Remedial Action is based on the Phase I Remedial Investigation (RI) performed by Duffield Associates, Inc., and the Phase I and II EAs completed by Tetra Tech, Inc., at the 400 S. Madison Street site, and is issued under provisions of the Delaware Hazardous Substance Cleanup Act (HSCA) and the Regulations Governing Hazardous Substance Cleanup (the Regulations). It presents the Department's assessment of the health and environmental risk posed by the impacted areas which have been remediated.

The Department will provide public notice and opportunity to comment on the Proposed Plan in accordance with section 12 of the Regulations. At the conclusion of the comment period, the Department, after review and consideration of the comments received, shall issue a Final Plan which will designate the selected procedures and stipulations concerning current and future activities. The Proposed Plan, the comments received from the public, the Department's responses to the comments, the Final Plan, and all of the documents which formed the basis for the proposed and final plans will constitute the record required for proposing no further action. The contents of the Proposed Plan include a description of the site, the analytical results of the investigations, and the intent for recommending no further action at the site.

Site Description and History

The 400 S. Madison Street site is a four acre parcel of land in the Bell Alley area of South Wilmington (Figure 1). A building occupying the eastern half of the property is 44,000 square feet. The building, parking lots, and concrete drainage way occupy 95% of the site, and the remaining area is landscaped. The property is bordered to the east by the Christina River, and the adjacent land use is industrial/commercial.

The parcel had been used for shipbuilding purposes from the late 18th century to approximately 1950. It is currently owned by Pettinaro Associates and was last occupied by Kaumagraph Corporation (a former Resource, Conservation and Recovery Act (RCRA) facility) in 1992. During construction of the Kaumagraph building in the fall of 1988, a chemical waste pile was uncovered in the western edge of the property, which presumably came from the Dravo Corporation shipbuilding activities (see Figure 2 for the exact location).

Pettinaro hired Duffield Associates, Inc., to perform an investigation of the waste pile, which revealed that high levels of toxaphene and poly-chlorinated biphenyls (PCBs) were present in the soil. These data are part of the analytical results of the Phase I RI conducted by Duffield Associates, Inc. Pettinaro then hired contractors to excavate and clean up the area. In December and January of 1988 and 1989, 34 drums containing soil and debris were removed from the site.

Tetra Tech, Inc., later performed Phase I and Phase II EAs at 400 S. Madison Street, which they began in March of 1995 and completed in July. Tetra Tech's investigation identified fill material during the hydropunch boring investigation. The Tetra Tech report also indicated that several areas of the Kaumagraph building slab had failed (cracked and sunk below normal floor grade). The failure of the slab may be due in part to the instability of the fill under the slab.

Investigation Results/Human Health and Environmental Risk Assessment

The RI conducted by Duffield Associates, Inc., in the fall of 1988 did reveal that high levels of toxaphene and PCBs existed at the 400 S. Madison Street site. The surface soil samples had levels of toxaphene as high as 23 mg/kg, while the subsurface samples reached 82 mg/kg (Table 1). The Environmental Protection Agency (EPA) has developed a Risk-Based Concentration (RBC) table factor for toxaphene in an industrial use exposure scenario, which is 5.2 mg/kg. All of the composite toxaphene soil samples (total of six) from the Duffield RI were above the carcinogenic-effects factor. Only one PCB reading was above the RBC level.

The RBC table utilizes standard default risk assessment scenarios to compute a lifetime carcinogenic and/or systemic toxicant risk posed to humans exposed to chemicals. The RBC values are based on a lifetime carcinogenic risk exposure to humans of 1×10^{-6} (i.e. the probability that one person will contract cancer from exposure to a chemical) and a systemic toxicant Hazard Index (HI) of 1.0. The RBC values are also translated to a particular chemical concentration which will produce the given carcinogenic risk factor of 1×10^{-6} or systemic toxicant risk of HI =

1.0. Over 600 chemicals which are commonly found at commercial and industrial use properties are included in the EPA RBC table.

The area of toxaphene/PCB contamination identified from the Duffield RI was excavated. Thirty-four drums of soil and debris were filled and removed to a RCRA-approved facility. The excavation area is now covered with either asphalt or concrete. There is no direct pathway to human exposure.

In March, 1995, Tetra Tech, Inc., performed a Phase I and Phase II EA at the 400 S. Madison Street property. The analytical results of Tetra Tech's Phase II assessment indicated that elevated levels of arsenic are present in the soil (see Table 2 for analytical results and Figure 3 for sample locations). One sample out of eight was above the Soil Screening Level of the RBC table, and six of eight samples were above the Industrial Soil Ingestion Concentration of the RBC table. Three sample locations had total petroleum hydrocarbon (TPH) concentrations detected in subsurface soil borings which exceeded 100 parts per million (ppm) (Table 3). As part of the Phase II EA, Tetra Tech, Inc., collected shallow groundwater samples through use of a hydropunch device at the location of the soil borings. The groundwater testing that was performed did not reveal contamination to be present at the site.

Arsenic is a chemical which has been detected throughout the State of Delaware at elevated concentrations due in part to its historical use as a pesticide. The concentrations of arsenic detected at this property do not represent a significant threat to human health or the environment due in part to its universal presence and the fact that no direct pathway of human exposure exists due to asphalt cover and building placement. Evaluation of the concentration of TPH in soil borings relative to Department cleanup standards utilized by the Underground Storage Tank (UST) Branch indicates that the levels detected are well within the 1000 ppm allowable level for industrial sites.

Based upon the aforementioned sample analytical results, and the recognition that the 400 S. Madison Street property is covered 95% by the building and with asphalt, the Department shall not recommend remediation of the subsurface soil.

Proposed Remedial Action Plan

Based upon the information and results of the investigations performed at the 400 S. Madison Street property, the Department recommends that no further investigation or remediation take place at the site. However, since fill material was discovered at the site, the Department shall require that the following actions occur:

- A deed restriction is placed on the property limiting it to industrial/commercial use only;
- the deed restriction include provisions which restricts excavation of the contaminated fill material or area of past remediation conducted by Pettinaro Associates; and
- the Department is contacted for approval before any excavation is performed should the owner/operator need to excavate beyond the clean fill area (the clean fill area shall be defined

as the fill which exists above the concrete drainage way located to the north of the property (see Figure 2).

Public Participation

The Department welcomes any comments or questions the public may have on the proposed plan.

Please call (302)323-4540, or write to the following address:

Superfund Branch
Attn: Jennifer Kyle
715 Grantham Lane
New Castle, DE 19720

Table 1
Toxaphene Detections from Duffield Associates' Remedial Investigation, 1988
(mg/kg)

Compound	SSL	ss-1	ss-2	ss-3	tp-1	tp-2	tp-3
Toxaphene	5.2	23	8.9	20	82	9.5	14

SSL = Soil Screening Level from EPA RBC table
 ss = surface soil
 tp = subsurface soil

Table 2
Arsenic Detections from Tetra Tech's Phase II Report, 1995
(mg/kg)

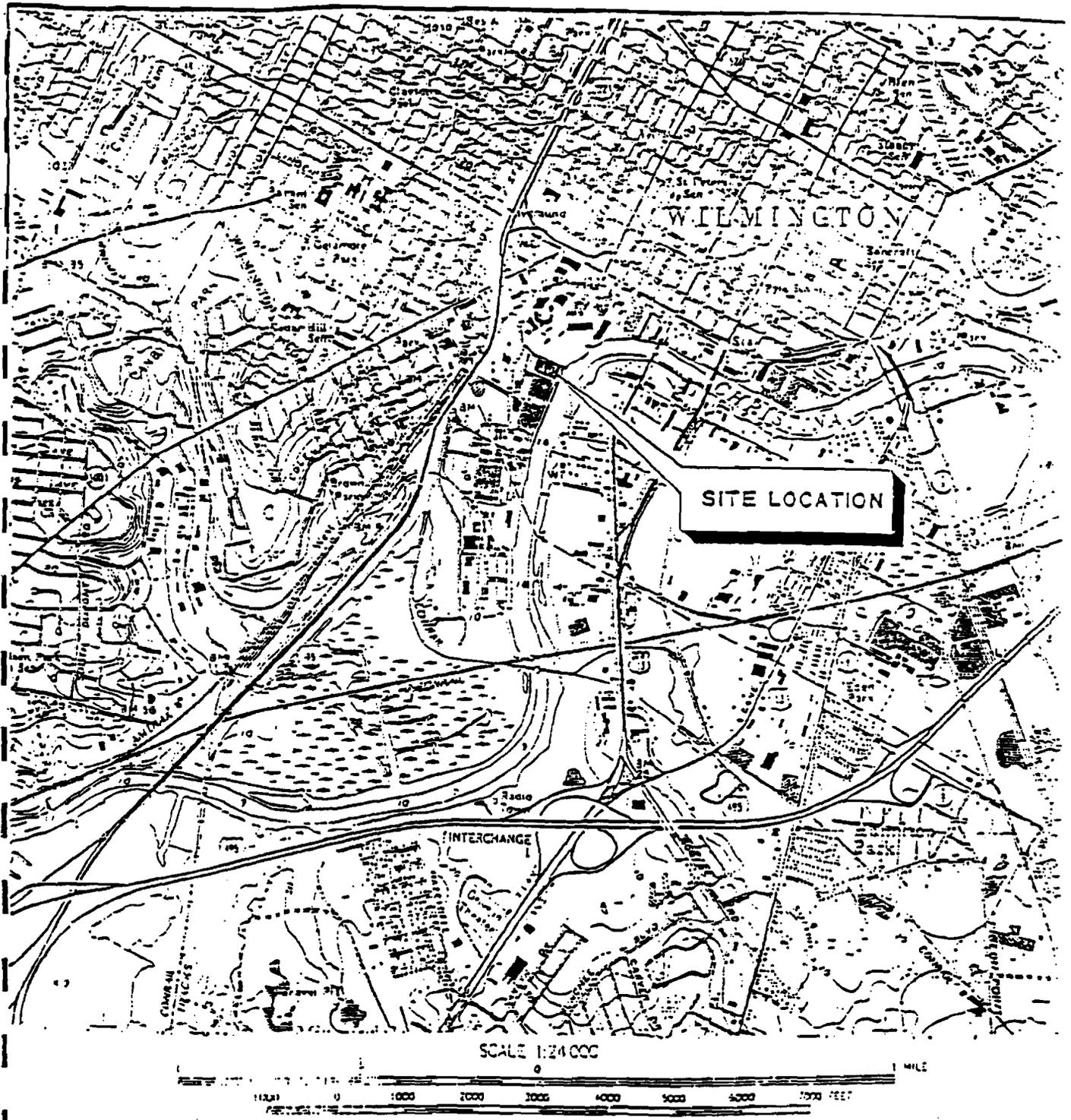
Compound	SSL	Ind. Ing.	B-1	B-3	B-4	B-5	B-7	B-8
Arsenic	15	3.3	64.8	9.9	4.3	8.9	6.1	9.8

B = soil boring
 Ind. Ing. = Industrial Soil Ingestion Concentration from EPA RBC table

Table 3
Total Petroleum Hydrocarbon (TPH) Detections from Tetra Tech's Phase II Report, 1995
(mg/kg)

Compound	Class A	Class B	B-1	B-5	B-8
TPH DRO	*	100	570	380	120

DRO = Diesel Range Organics
 State of Delaware Underground Storage Tank Guidelines site classifications:
 for sites classified as "A", action levels are on a case-by-case basis
 for sites classified as "B", the lowest action level for TPH in soils is 100 mg/kg.

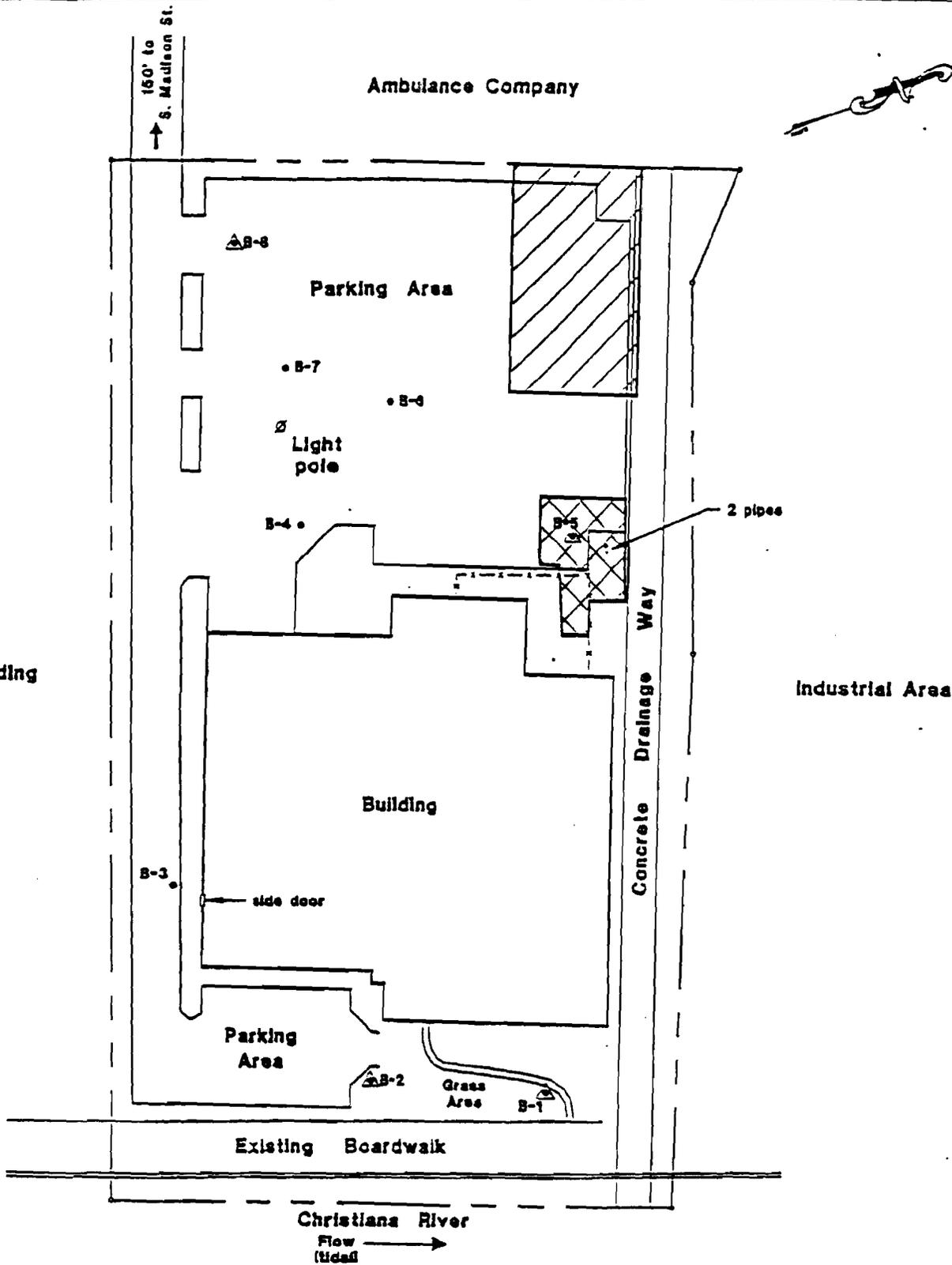


SOURCE: USGS, 7.5 QUADRANGLE WILMINGTON SOUTH, DE.



TETRA TECH, INC.

FIGURE 1
 GENERAL LOCATION MAP
 MADISON BUILDING SITE
 400 S. MADISON STREET
 WILMINGTON, DELAWARE



LEGEND:

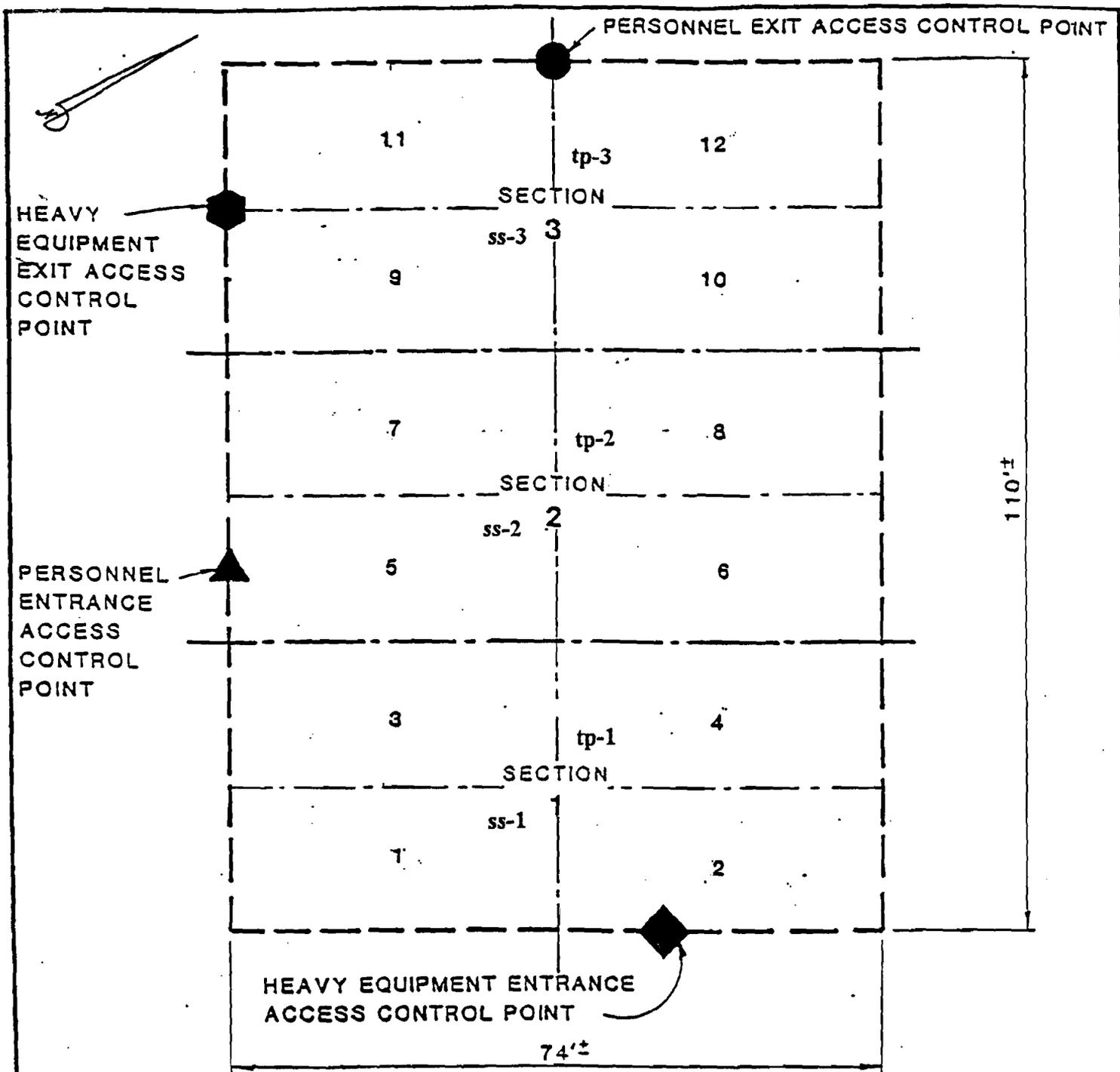
-  Approx. area of former surface soil Investigation (for Pettinaro, by Duffield Assoc.)
-  Area surveyed for underground metal features
- B-3• Soil Sample Location
- B-2▲ Soil and Ground-Water Sample Location

NOT TO SCALE



FIGURE 2
SAMPLE LOCATION MAP
MADISON BUILDING SITE
400 S. MADISON STREET
WILMINGTON, DELAWARE

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SYNOPSIS OF SAMPLES:

- 3 SURFACE SOIL COMPOSITES
- 3 SUBSURFACE SOIL COMPOSITES
- 1 SOIL COMPOSITE DUPLICATE
- 1 BACKGROUND SOIL COMPOSITE
- 2 BACKGROUND ENCOUNTERED GROUNDWATER

FIGURE 3
 SAMPLING GRID
 FOR THE EXCLUSION ZONE
 HARBOR PLACE INDUSTRIAL PARK
 WILMINGTON, DELAWARE



DUFFIELD ASSOCIATES, INC.
 CONSULTING GEOTECHNICAL ENGINEERS

Drawn: DSH	Chk'd: MCM	Date: 9/14/88
Scale: 1"=20'	W.O.: 1275-HA	
File No.: A-1275HA- 4		