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SCOPE OF WORK FOR THE FOCUSED REMEDIAL INVESTIGATION OF OPERABLE UNIT 2

Sunnyside Yard
Queens, New York

January 31, 1997

Prepared for:

National Railroad Passenger Corporation
30th Street Station
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CONTENTS

FIGURES

1.0 INTRODUCTION

At the request of the National Railroad Passenger Corporation (Amtrak), Roux Associates, Inc. (Roux Associates) has prepared this Scope of Work to support construction of the High Speed Trainset Facility (HSTF) Service and Inspection (S&I) building ancillary structures (i.e., the access road and utilities route, the parking area, and construction laydown area) which has been designated operable unit 2 (OU-2) at the Sunnyside Yard, Queens, New York (Yard) and is shown in Figure 1.

1.1 Objectives

The objectives of this investigation are as follows:

- to characterize the environmental conditions (i.e., soil quality) of the soil in OU-2;
- to characterize soils to be excavated and either removed for disposal or reused during construction activities; and
- to monitor ground-water elevation and flow patterns in the construction area.

NO GW QUALITY.

2.0 SCOPE OF WORK

The scope of work will consist of the drilling and sampling of ten soil borings located within OU-2, (the access road and utilities route, the parking area, and construction laydown area). Three of the soil borings will be completed as temporary piezometers.

The scope of work is divided into the following three tasks:

- **Task 1** - Soil Boring and Sampling Program;
- **Task 2** - Analytical Program; and
- **Task 3** - Data Evaluation and Report Preparation.

2.1 Task 1 - Soil Boring and Sampling Program

To ensure that the soil borings would not disrupt any unmapped underground utilities, Amtrak has requested that the first three feet of all soil borings be advanced by hand. Further advancement of soil borings to depths greater than three feet below land surface (bls) may be accomplished either manually (i.e., posthole digger, hand auger and/or split-spoon sampler) or mechanically (i.e., Geoprobe™ or hollow stem auger drill rig). The method of advancement will be determined by borehole purpose, location, subsurface conditions and/or accessibility.

The locations of the proposed soil borings (HST-9 through HST-15, and TP-8 through TP-10) are shown in Figure 2. The proposed locations may be modified if updated specification drawings are available prior to implementation of this scope of work. All soil borings will be completed to the water table with continuous sampling at 2-feet intervals, Soil Borings TP-8 through TP-10 will be advanced to approximately seven feet below the water table and completed as temporary piezometers. For what purpose — free product?

A log describing the geologic conditions will be developed. The soil samples will be screened in the field using a photoionization detector (PID) and visually inspected for any evidence of contamination (i.e., staining, or the presence of petroleum or odors).

All temporary piezometers will be constructed with 10 feet of 2-inch diameter, 10-slot (0.010 inch) PVC well screens and 2-inch diameter PVC riser casing. The annular space will be packed with a No. 0 Morie sand to approximately one to two feet above the top of the well screen, followed by a 1-foot layer of bentonite. The remaining annular space will be filled with a bentonite/cement grout to approximately 1 foot bls. A locking steel protective casing will then be placed over the well casing and cemented in place.

Following installation, each temporary piezometer will be developed using a pump and surge method (to ensure hydraulic connection with the surrounding aquifer) and surveyed for vertical elevation coordinates relative to benchmarks previously established for the Yard.

Water-level measurements will be collected from all newly installed temporary piezometers in OU-2 and from previously installed monitoring wells at the Yard to determine current ground-water elevations and flow patterns.

2.2 Analytical Program

The 0 to 2 feet bls sample interval and the vadose zone sample (i.e., the 2-foot interval immediately above the water table) from each borehole will be submitted for laboratory analysis. Depending on depth to water and suspected degree of contamination, a maximum of three soil samples per borehole may be submitted for laboratory analysis. Selection of a third sample will be based upon evidence (i.e., odor, staining, or color) of a different type of contamination at a depth interval other than described above. The analyses will include the following:

- polychlorinated biphenyls (PCBs);
- Target Compound List (TCL) volatile organic compounds (VOCs);
- TCL semivolatile organic compounds (SVOCs);
- Target Analyte List (TAL) metals;
- Resource Conservation Recovery Act (RCRA) characteristics (i.e., corrosivity, reactivity and ignitability); and
- chlorinated herbicides.

To characterize the soil conditions, all samples submitted to the laboratory will be analyzed for PCBs, TCL VOCs, TCL SVOCs, and TAL metals. In addition, for waste characterization (for disposal or reuse purposes) approximately 25 percent of the samples collected will be submitted for chlorinated herbicides (by toxicity characteristic leaching procedure [TCLP]) and RCRA characteristic analyses.

With the exception of the chlorinated herbicides analyses, the toxicity characteristic under RCRA will not initially be analyzed using an extraction-procedure method (i.e., TCLP). Instead, as outlined in the May 27, 1993 NYSDEC memorandum, "if the 'total constituent' result is less than 20 times the toxicity characteristic level or land disposal restriction extract level, it is impossible for the extract to 'fail' and the TCLP does not need to be performed." If any constituent fails the "20 times" test, a TCLP analysis will be performed to determine the waste classification for that constituent. This toxicity characteristic evaluation will be performed concurrently with an evaluation of the RCRA characteristics of ignitability, corrosivity and reactivity to determine if the soil is to be considered as hazardous or non-hazardous and will be used to support the remediation plan, if necessary.

All analyses will be performed by I.E.A., Inc. of Monroe, Connecticut. The NYSDEC Analytical Services Protocols (ASP) will be followed by the analytical laboratory. Data validation of the analytical results will be performed and therefore, a category B reporting package will be supplied.

2.3 Task 3 - Data Evaluation and Report Preparation

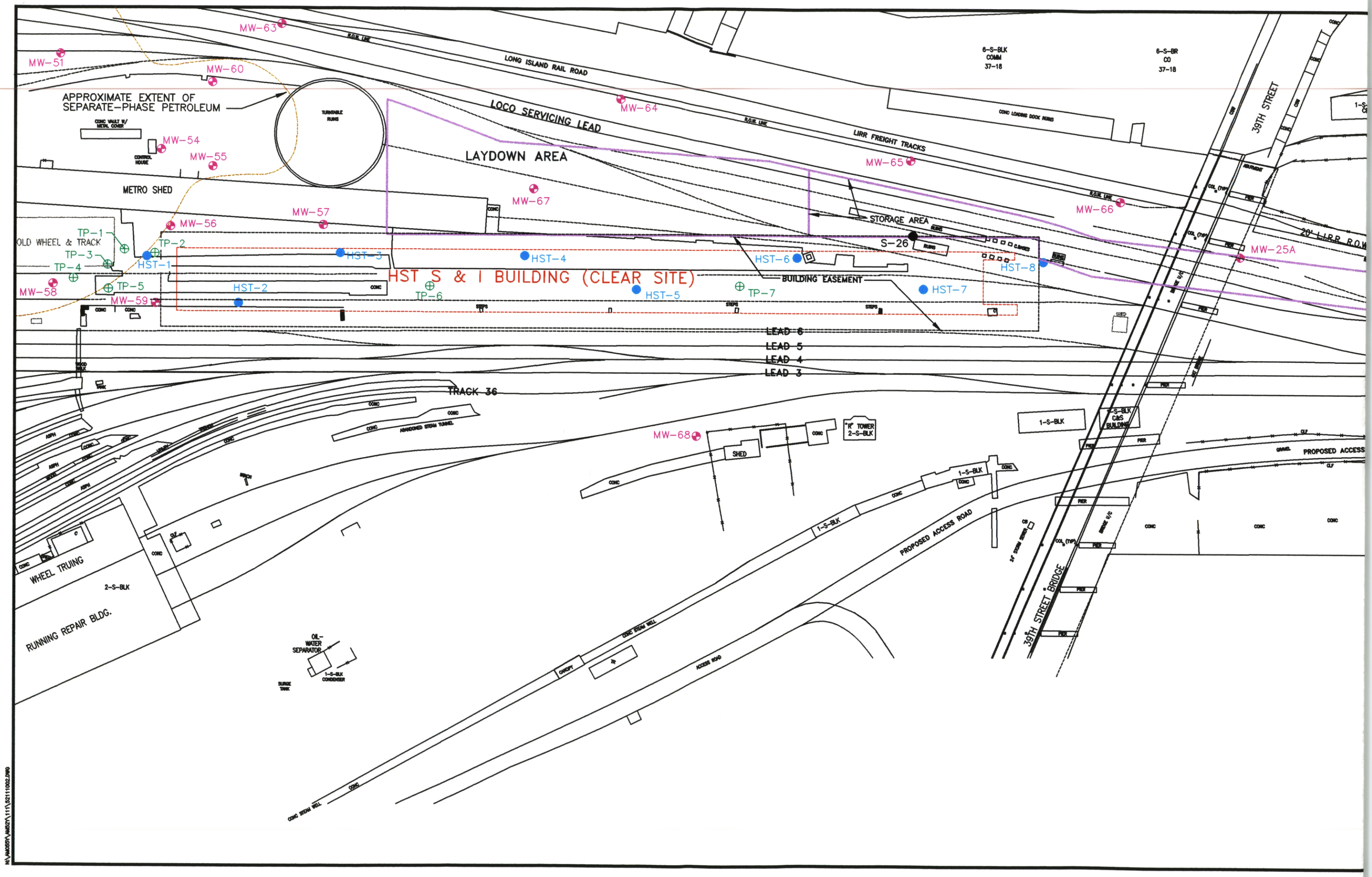
Upon receipt of the analytical results, the data will be evaluated to determine the nature and extent of contamination within OU-2. In addition, potential soil disposal requirements will be evaluated, if necessary.

A report will be prepared and submitted to NYSDEC that presents the methods of investigation, our findings (including analytical results), conclusions and any recommendations that may be appropriate (i.e., if additional delineation is required in some areas). These data will then be used to support the preparation of the remediation plan for this project, if necessary.

3.0 SCHEDULE

Assuming the NYSDEC approval of this scope of work by February 3, 1997, the estimated schedule for completion of the work is as follows:

- completion of field work for OU-2 by February 14, 1997;
- remedial investigation report for OU-2 to the NYSDEC by May 1, 1997; and
- focused feasibility study for OU-2 to the NYSDEC by May 19, 1997.



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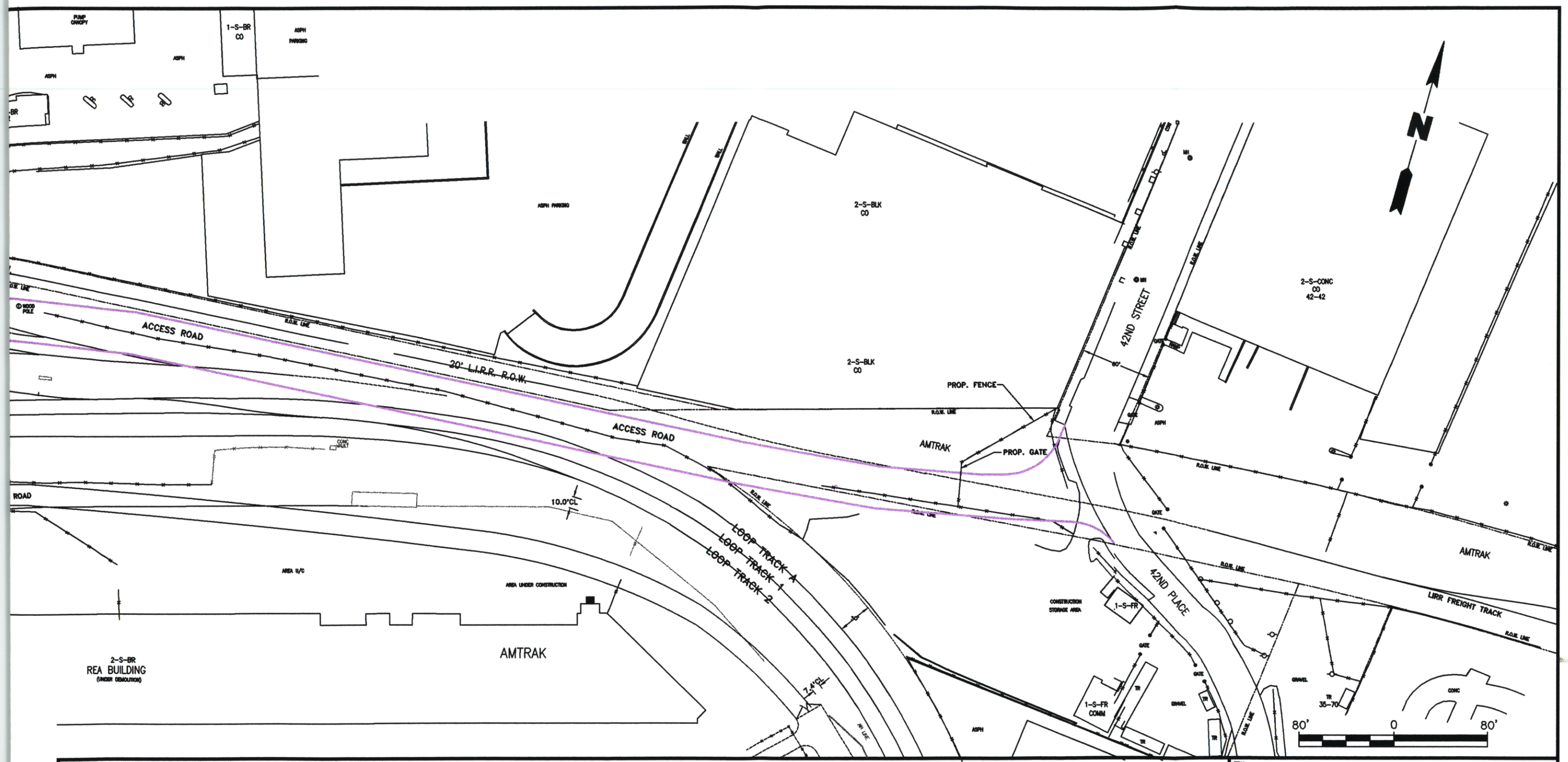

LEGEND

- APPROXIMATE HSTF S&I BUILDING LOCATION
- APPROXIMATE BOUNDARY OF OPERABLE UNIT 2
- MW-68 MONITORING WELL LOCATION AND DESIGNATION
- S-26 PHASE I SOIL BORING LOCATION AND DESIGNATION
- HST-8 SOIL BORING LOCATION AND DESIGNATION
- TP-7 TEMPORARY PIEZOMETER LOCATION AND DESIGNATION

Title:

SITE MAP
OPERABLE UNIT 2

SUNNYSIDE YARD
QUEENS, N.Y.

Prepared For:
AMTRAK

ROUX ASSOCIATES INC
Environmental Consulting & Management

Compiled by: H.G.	Date: 1/97	FIGURE
Prepared by: R.R.	Scale: As Shown	1
Project Mgr: J.D.	Status: Final	
File No: 52111002	Project: 05552Y03	