Long Island Rail Road
MTA CONTRACT NO. 5-01-00032-0-0
ENVIRONMENTAL CONSULTANT SERVICES

Underground Injection Control Closure Plan

Manhasset: Site No. V00396-1, Index No. W1-0909-02-02

Massapequa: Site No. V00397-1, Index No. W1-0910-02-02

Island Park: Site No. V00392-1, Index No. W1-0908-02-02

November 2002

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CONSULTING ENGINEERS
A DIVISION OF WILLIAM F. COSULICH ASSOCIATES, P.C.

RLA/JOBS/MTA2015(11/19/02)

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UNDERGROUND INJECTION CONTROL
CLOSURE PLAN
for
MANHASSET, MASSAPEQUA AND ISLAND PARK SUBSTATIONS

Prepared for:

METROPOLITAN TRANSPORTATION AUTHORITY
LONG ISLAND RAIL ROAD

Prepared by:

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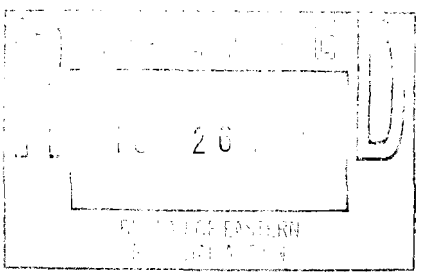
NOVEMBER 2002



UNDERGROUND INJECTION CONTROL CLOSURE PLAN
MANHASSET, MASSAPEQUA AND ISLAND PARK SUBSTATIONS

TABLE OF CONTENTS

List of Exhibits

List of Figures

List of Tables

1.0 INTRODUCTION

The closure of various types of "injection wells" (dry wells) is required pursuant to the Underground Injection Control (UIC) program, as mandated by Part C of the federal Safe Drinking Water Act. Regulations concerning the UIC program are contained at 40 CFR Parts 124, 144, 145, 146 and 147. An "injection well" is defined under 40 CFR 144.3 as a well where fluids are injected into the ground. A "well" is defined as any bored, drilled or driven shaft, or a dug hole whose depth is greater than its largest surface dimension. According to federal regulations, injection wells are classified as either Class I, II, III, IV or V depending on the intended use of the well.

This document has been prepared to address drainage structures located at the Manhasset, Massapequa and Island Park electric substation sites owned and operated by the Long Island Rail Road (LIRR) that require closure pursuant to the UIC program. This report presents a generic closure plan for sealing any floor drains and disconnecting any slop sinks which are determined to discharge to the dry wells along with the decommissioning of any distribution/septic tanks and dry wells determined to require closure in accordance with the referenced federal regulations. In accordance with typical UIC requirements, the steps outlined in this closure plan will be implemented for drainage structures that are determined to require closure pursuant to the UIC program.

The LIRR has conducted a program to identify UIC regulated drainage structures at 20 electric substations that previously contained mercury rectifiers. The results of this program are documented in the report entitled, "Site Assessment of 20 Substations for Mercury Contamination," dated December 2000, which was prepared by Dvirka and Bartilucci Consulting Engineers.

Section 2.0 of this closure plan presents a description of the Manhasset, Massapequa and Island Park LIRR electric substations that contain UIC regulated drainage features. Section 3.0 includes the UIC closure procedures and summarizes the drainage structures that require UIC

remediation/closure. In addition, Quality Assurance/Quality Control (QA/QC) procedures are provided in Exhibit A.

2.0 SITE DESCRIPTION

The LIRR constructed and operated substations from the early 1930s through 1951 that utilized mercury rectifiers. These rectifiers allowed the LIRR to receive 60-cycle, alternating current (AC) from local utilities and convert it to direct current (DC) for use as a source of electric power for its locomotives and electric passenger car fleet. The LIRR identified 20 substations located throughout Queens, Nassau, and Suffolk Counties that once utilized mercury containing rectifiers.

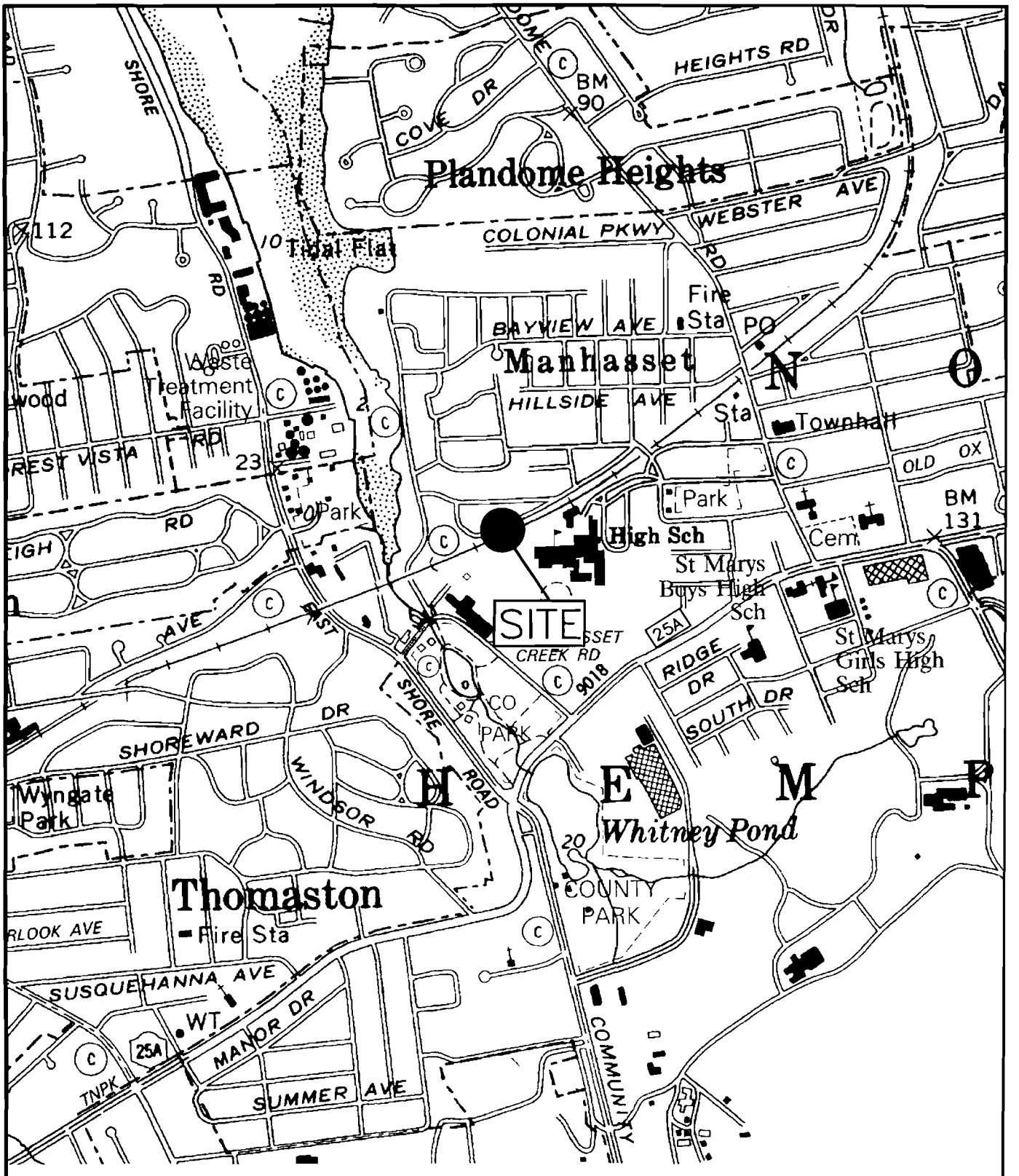
It is believed that during the early 1980s, the remaining mercury rectifiers were taken out of service and physically removed from these LIRR substations and replaced with non-mercury containing solid state equipment. However, due to uncertainties surrounding the work practices that may have been employed when managing the operation and maintenance of these mercury rectifiers, the LIRR believed it necessary to conduct environmental assessments at these 20 electric substations to determine the potential effects that may have occurred to the surrounding environment.

As stated in Section 1.0, the environmental site assessments completed in December 2000 at the 20 electric substations included drainage discharge determination activities (i.e., flush/dye tests and mechanical snaking) to identify UIC regulated drainage structures. However, this UIC Closure Plan addresses only the Manhasset, Massapequa and Island Park substations. Provided below are descriptions of the site and drainage systems for the Manhasset, Massapequa and Island Park substations as determined by the environmental site assessments completed in December 2000.

2.1 Manhasset

2.1.1 Site Description

The Manhasset substation site is located in Manhasset, Nassau County, New York (see Figure 2-1). The site consists of a 25-foot by 30-foot one-story brick building located within the



LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN

SITE LOCATION MAP
MANHASSET SUBSTATION–N10

FIGURE 2–1

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LIRR right-of-way, 12 feet north of the existing train tracks as shown on Figure 2-2. A 30-foot by 30-foot transformer yard is located immediately east of the substation building and is secured by a perimeter chain-linked fence. The remaining portion of the site is a rectangular-shaped, partially developed, parcel of land. The substation complex is presently utilized to convert alternating current to direct current for the LIRR-Port Washington line. The areas surrounding the substation and the transformer yard are used for storage of equipment and supplies by the LIRR.

The Manhasset substation does not house any sanitary or office facilities but is served by public water. The interior of the substation consists of an active solid-state rectifier located over a pit that once supported a mercury-containing rectifier. However, during the site inspection conducted by D&B on February 13, 2002, the solid-state rectifier had been removed in support of the ongoing overall capital improvement project for the Manhasset substation. The substation is also equipped with a second pit, referred to as a water trough on LIRR construction drawings, which is covered by a metal utility plate. During the initial site investigation conducted in 1999, D&B observed that the rectifier pit contained one floor drain and the water trough contained 2 floor drains. In addition, the Manhasset substation was equipped with a slop sink along the eastern substation wall that discharged to the transformer yard located to the east of the substation. The Manhasset substation does not have a basement or a utility trench system. It should also be noted that the Manhasset substation historically contained a bank of active lead-acid batteries located in the northwest corner of the substation to provide back-up electricity for the substation switch equipment in the event of a power failure.

During the initial site investigation, D&B observed that storm water drainage from the substation property is conveyed to an existing storm water drainage system. The storm water drainage system originates from an elevated area to the south of the substation and the LIRR right-of-way and is conveyed via a concrete pipe which extends to the north running under the tracks. The concrete pipe discharges to a corrugated pipe, approximately 80 feet to the east of the substation. The corrugated pipe conveys flows in a westerly direction and discharges to a drainage swale located immediately to the west of the substation. Storm water continues to flow

LEGEND

FLOOR DRAIN (F.D.)

CHAIN LINK FENCE

APPROXIMATE GROUNDWATER FLOW DIRECTION

DRAINAGE SWALE

4 WOODEN R.R. TIES

FORMER RECTIFIER PIT

WATER TROUGH PIT

TRANSFORMER YARD

DRAIN THROUGH WALL

SLOP SINK

METAL PLATE COVERED CONDUIT PIT

METAL PLATE COVERED CONDUIT PIT

DRY WELL

EXISTING RAIL ROAD TRACK

0 5 10

SCALE IN FEET

SOURCES: AVAILABLE LONG ISLAND RAIL ROAD CONSTRUCTION DRAWINGS & D&B's FIELD OBSERVATIONS

LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN
SITE PLAN

MANHASSET SUBSTATION – N10

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FIGURE 2-2

west along the northern boundary of the substation approximately 800 feet, down an embankment to the headwaters of Manhasset Bay.

2.1.2 Drainage Description

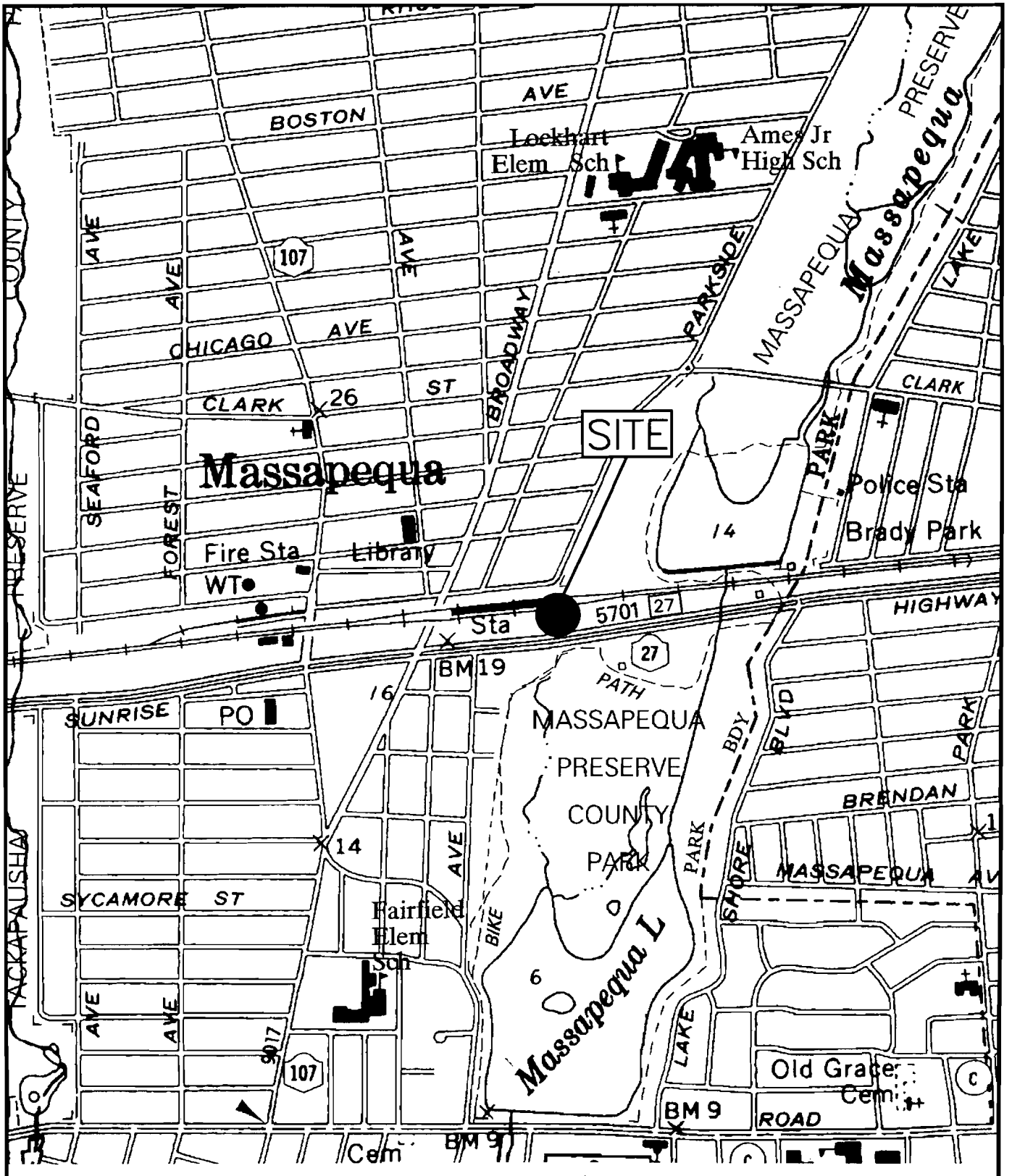
As part of the December 2000 Environmental Site Assessment, a total of three interior pit floor drains were flush tested utilizing potable water. One drain is located within the rectifier pit and two drains are located within the water trough pit (see Figure 2-2). D&B determined that the rectifier pit drain discharges directly to the subsurface. The west drain in the water trough pit discharges directly to the subsurface, while the east drain discharges to a dry well located approximately 7.5 feet southeast corner of the substation. D&B also determined that the interior slop sink discharges to the surface soil located within the transformer yard located to the east of the substation. It should also be noted that the metal plate covered conduit pit located in the transformer yard contains a floor drain that discharges directly to the subsurface.

2.2 Massapequa

2.2.1 Site Description

The Massapequa substation site is located in Massapequa, Nassau County, New York (see Figure 2-3). The site consists of an approximately 625 square foot one-story brick building as shown in Figure 2-4. An approximately 2,500 square foot transformer yard is located adjacent to the substation to the west and is secured by a perimeter chain-linked fence. The substation complex is presently utilized to convert alternating current to direct current for the LIRR-Montauk line. The areas surrounding the substation and the transformer yard are currently utilized as vehicular parking and pedestrian traffic areas.

The Massapequa substation is not equipped with a basement or any sanitary and office facilities. The interior of the substation consists of an active solid-state rectifier located over a pit that once supported a mercury-containing rectifier. The substation is also equipped with a second pit, referred to as a water trough on LIRR construction drawings. In addition, the



N.T.S.

LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN

SITE LOCATION MAP
MASSAPEQUA SUBSTATION–S15

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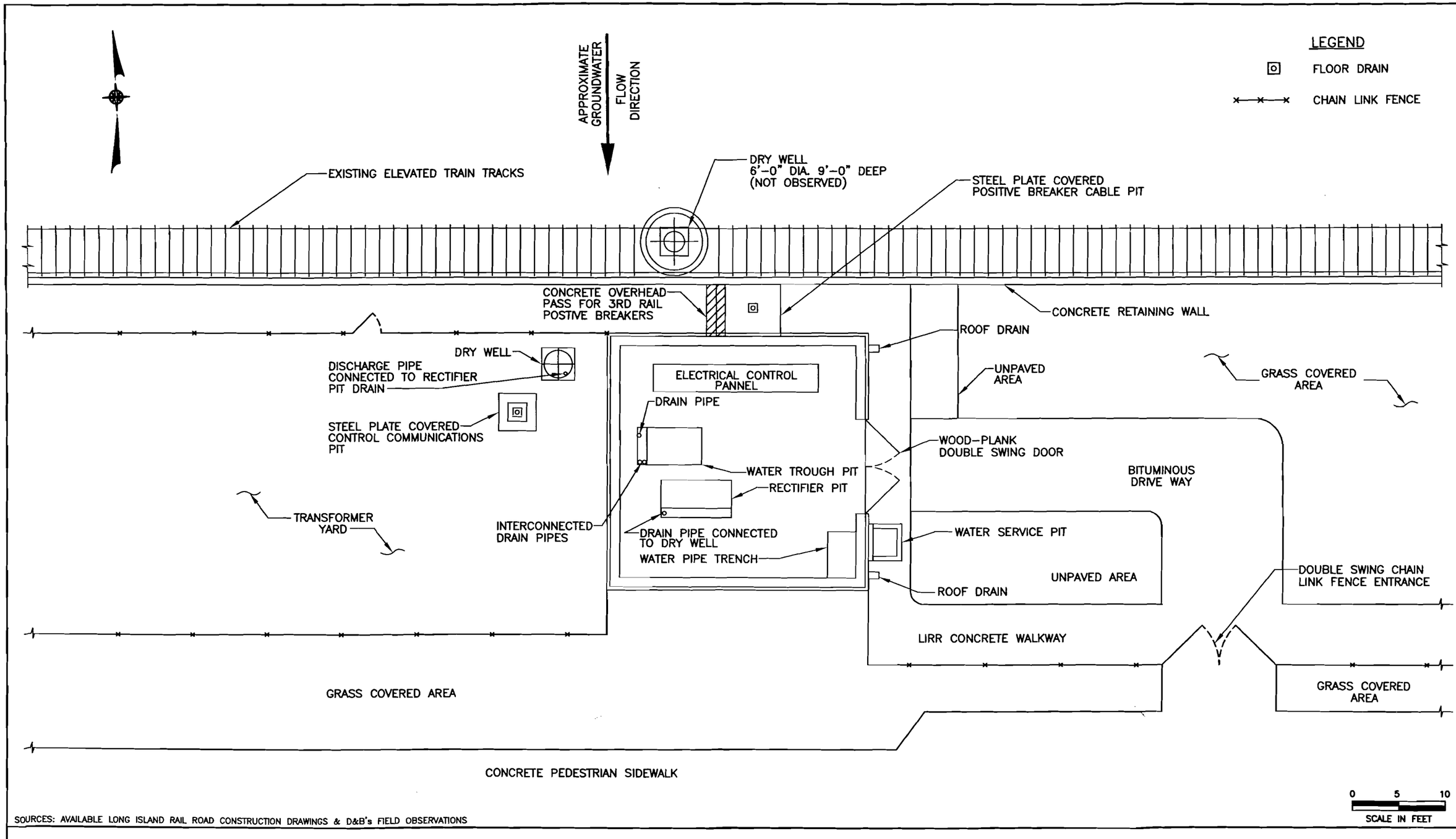
FIGURE 2–3



SOURCES: AVAILABLE LONG ISLAND RAIL ROAD CONSTRUCTION DRAWINGS & D&B's FIELD OBSERVATIONS

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LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN
SITE PLAN

MASSAPEQUA SUBSTATION – S15

FIGURE 2-4

substation contains a water pipe trench with a concrete bottom located in the southeast corner of the substation.

The site investigation conducted by D&B in 1999 revealed the presence of a water service pit with an earthen bottom located off the southeast corner of the substation. A dry well with a solid cover was also observed off the northwest corner of the substation located within the transformer yard. In addition, a steel plate covered control communications pit, containing a floor drain, was located within the transformer yard. It should be noted that there was a cable within the communications pit that was coated with a material that resembled asbestos. A steel plate covered positive cable pit containing a floor drain was also observed along the north side of the substation. Available LIRR construction drawings indicate that a dry well is located approximately 10 feet north of the substation. However, this dry well, if present, would currently be located beneath the existing railroad tracks.

2.2.2 Drainage Description

As part of the December 2000 Environmental Site Assessment, a total of three drain pipes were traced. Two drain pipes originate in the former water trough pit and one in the rectifier pit, both of which are located within the substation building. It was determined that the first drain pipe located within the rectifier pit is connected to the dry well located in the northeastern corner of the transformer area immediately west of the substation. When the drain was flushed with potable water, water was observed entering the dry well. The two drains in the former water trough were traced utilizing a transmitter conductively attached to the exposed pipe. These two water trough drains were traced to the same drainage pipe that exits the building under the western wall of the substation. The signal was received approximately 4 feet west of the building and faded beyond this location.

It should also be noted that a steel plate covered control communications pit located within the transformer yard contains a floor drain that discharges directly to the subsurface. In addition, a steel plate covered positive cable pit located along the north side of the substation contains a floor drain that discharges directly to the subsurface.

2.3 Island Park

2.3.1 Site Description

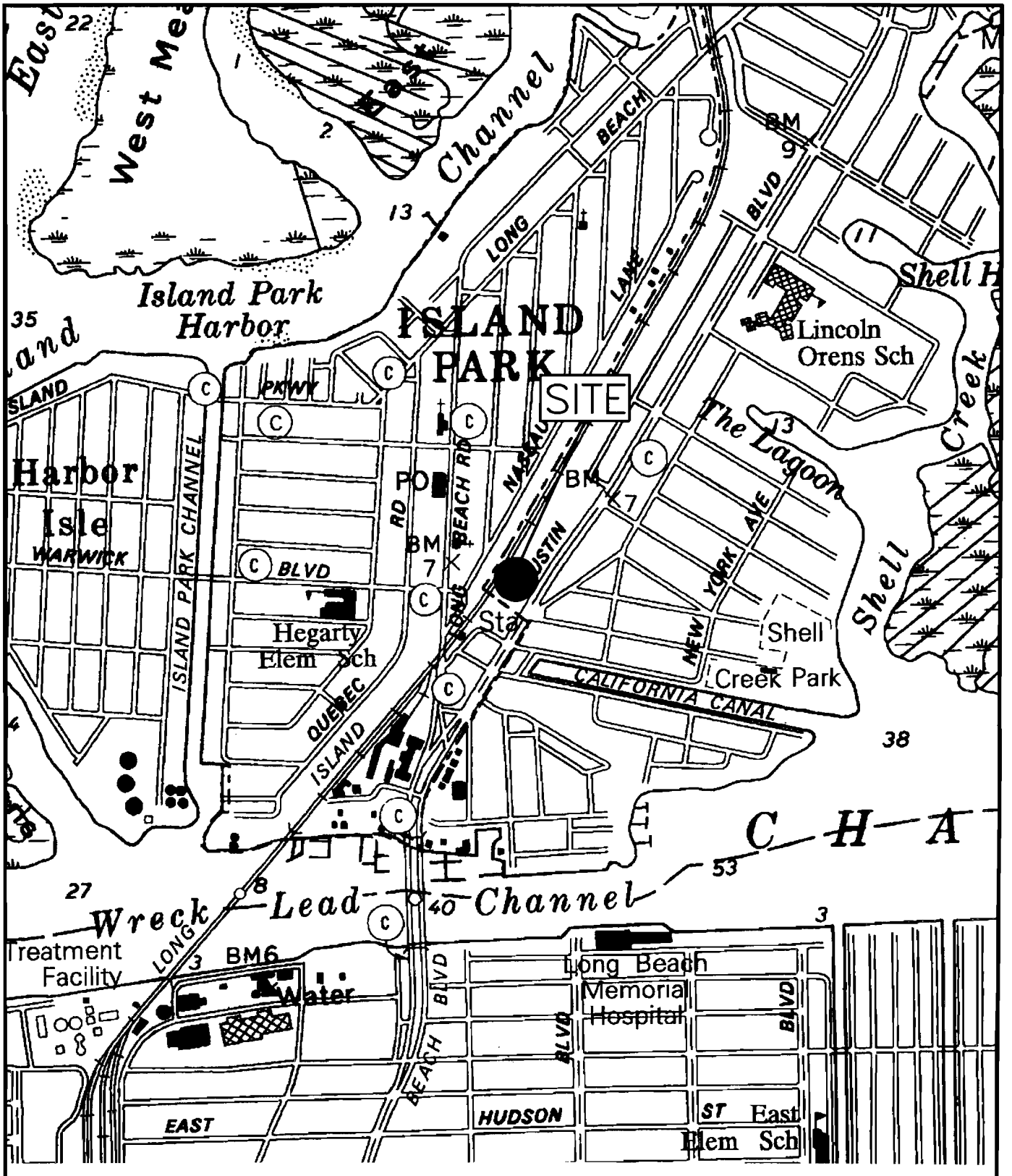
The Island Park substation site is located in Island Park, Nassau County, New York (see Figure 2-5). The site consists of an approximately 1,800 square foot one-story brick building as shown on Figure 2-6. An approximately 3,000 square foot transformer yard is located adjacent to the substation to the northeast and is secured by a perimeter chain-linked fence. The substation complex is presently utilized to convert alternating current to direct current for the LIRR-Long Beach line. The areas surrounding the substation and the transformer yard are currently utilized for vehicular parking.

It is important to note that during the initial site inspection conducted by D&B in 1999, the septic tank located to the southwest of the substation was full of sanitary waste. In addition, the on-site LIRR representatives indicated to D&B that there has been problems with the sanitary system overflowing onto the parking lot in the past.

The Island Park substation contains a basement, sanitary facilities, water service and a utility trench system. The interior of the substation consists of two active solid-state rectifiers located over two separate pits leading to the basement. These pits once supported the mercury-containing rectifiers. In addition, there is a water meter pit with an earthen bottom that is covered with a steel plate located off the northwest corner of the substation as shown in Figure 2-6.

2.3.2 Drainage Description

As part of the December 2000 Environmental Site Assessment, two drain pipes which exit sub-grade pits beneath rectifiers inside the substation building were traced utilizing conventional geophysical techniques. One pipe exited the north side of the pit and appeared to terminate beneath the unpaved area between the substation and the train tracks (approximately 21 feet from the north wall of the building). D&B was prohibited by LIRR personnel to excavate



LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN

SITE LOCATION MAP
ISLAND PARK SUBSTATION–L03

FIGURE 2–5

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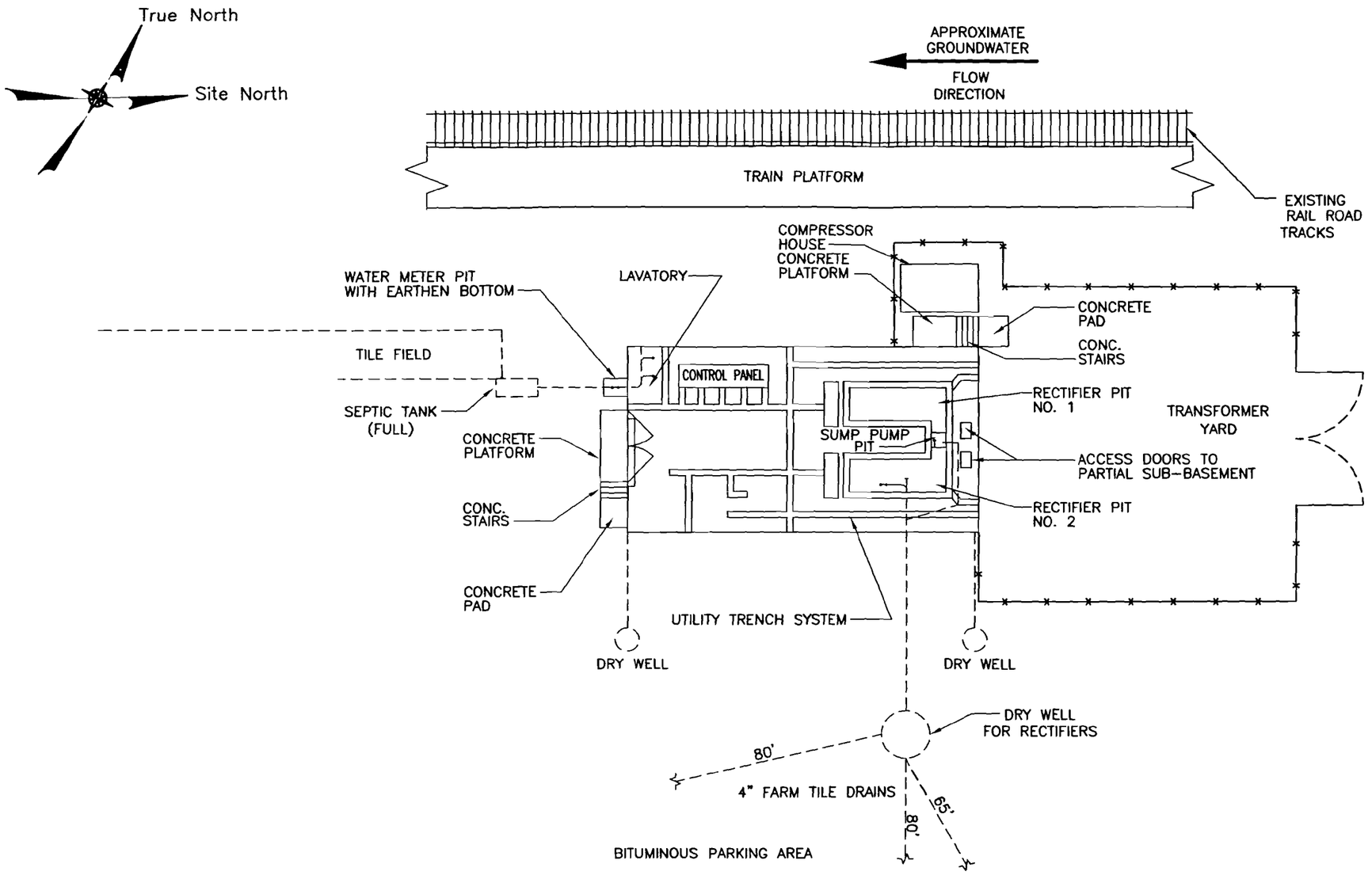

SOURCES: AVAILABLE LONG ISLAND RAIL ROAD CONSTRUCTION DRAWINGS & D&B's FIELD OBSERVATIONS

LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN
SITE PLAN

ISLAND PARK SUBSTATION –L03

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FIGURE 2–6

this area to determine if a discharge feature exists due to the presence of electrical utilities. The second pipe exited from beneath the eastern wall of the building and appeared to terminate under the parking lot approximately 30 feet east of the eastern wall of the building. It should be noted that this location roughly corresponds to the "dry well for rectifiers" identified on LIRR construction drawings.

It should also be noted that a geophysical survey was also conducted in an attempt to locate three dry wells presumed to be located east of the substation. The geophysical survey, which included a total magnetic gradiometer survey and a GPR survey, suggests that the suspected locations of the three dry wells coincide with the locations provided on the available LIRR construction drawings. D&B utilized these geophysical results to position soil borings to target the locations of the suspected drainage features.

3.0 CLOSURE PROCEDURE

This section of the Closure Plan presents the general procedure to be utilized in order to decommission any drainage structure determined to require closure, as well as any interconnected distribution/septic tanks, floor drains and slop sinks. The following steps are to be performed when closing any drainage structures, as well as their associated interconnected distribution/septic tanks, floor drains, slop sinks, etc. It should be noted that the NYSDEC approved Health and Safety Plan dated August 2002 and subsequent Addenda will be followed for ground-intrusive activities associated with this UIC Closure Plan.

STEP 1 - Perform a smoke, dye, flush or excavation test on the dry wells, floor drains and slop sinks to confirm the configuration of the drainage network. This task has already been conducted for a majority of the drainage structures as documented in the report entitled, "Site Assessment of 20 Substations for Mercury Contamination." Discharge confirmation will be conducted based on field direction from the regulatory agencies.

STEP 2 - Steam clean or high pressure wash the floor drains, grout all discharge lines with an impervious bentonite/cement slurry and seal the floor drains with concrete to match the existing surface. Disconnect slop sinks and close discharge lines as referenced above or reroute to alternative discharge point in accordance with any and all applicable regulations.

STEP 3 - Remove standing liquid and sludge from the distribution/septic tank(s), if present, utilizing a "guzzler" vacuum truck and/or an "orange peeler" excavator. Steam clean or high pressure wash the interior walls of the distribution/septic tank(s) and remove the waste rinsate utilizing the vacuum truck. Contain the removed liquid and sludge, as separate matrices if possible, in the vacuum truck, properly labeled, Department of Transportation (DOT)-approved 55-gallon drums and/or lined and covered roll-off(s), pending appropriate waste characterization (see Step 7) for off-site transportation and disposal. Close the distribution/septic tank(s) in place by backfilling with clean bank run sand and sealing the area to grade with asphalt and/or concrete to match the existing surface.

STEP 4 - Remove standing liquid and sludge from the dry wells utilizing a "guzzler" vacuum truck and/or an "orange peeler." Steam clean or high pressure wash the interior walls of the ring structures and remove the waste rinsate utilizing a "guzzler" vacuum truck and/or "orange peeler" excavator. Contain the removed liquid and sludge, as separate matrices if possible, in the vacuum truck, properly labeled, DOT-approved 55-gallon drums and/or lined and covered roll-offs, pending appropriate waste characterization (see Step 7) for off-site transportation and disposal. Remove underlying soil utilizing a "guzzler" vacuum truck and/or an "orange peeler" excavator to "visibly

clean" conditions or until the point where further excavation may compromise the structural integrity of the ring structure. Contain the excavated soil in properly labeled, DOT-approved 55-gallon drums and/or lined and covered roll-offs, pending appropriate waste characterization (see Step 7) for off-site transportation and disposal.

STEP 5 - Collect end point soil samples from each of the drainage features (where applicable) for laboratory analysis. In accordance with USEPA policy, the endpoint soil samples will be analyzed for RCRA metals (total analysis by Methods 6010/7471), TPHCs (Method 8015M), semivolatile organic compounds (SVOCs) by Method 8270, and volatile organic compounds (VOCs) by Method 8260. In addition, if groundwater is encountered during the remediation of a UIC structure, a groundwater sample will be collected and analyzed for VOCs by Method 8260, RCRA metals by Methods 6010/7471 and PCBs by Method 8082. All analytical sampling will be conducted in accordance with the Quality Assurance/Quality Control measures presented in Exhibit A.

STEP 6 - The analytical endpoint soil sample results will be provided to the Department along with brief descriptions of the drainage structures. After NYSDEC review and approval of the end point analytical sampling results, the dry wells will be closed in place as follows:

- Remove the metal manhole cover and vault.
- Break the concrete dome into the bottom of the dry well and backfill with clean bank run sand, or leave the dome intact, backfill with clean bank run sand, and place a concrete slab over the dome of the backfilled dry well.
- The dry well shall be sealed with a minimum of five inches of concrete. The area overlying the dry well shall be restored to match the existing surface.
- Dry wells that provide active storm water drainage may be kept in service after all discharge lines are properly decommissioned and disconnected as described in Step 1.

STEP 7 - The liquid, sludge and soil removed from the dry wells and distribution/septic tank(s), if present, will be characterized prior to off-site transportation and disposal in accordance with the requirements of the selected disposal facility. This would typically include, but not necessarily be limited to, analyses utilizing the Toxic Characteristic Leaching Procedure (TCLP) for all constituents, excluding pesticides and herbicides. All analytical sampling will be conducted in accordance with the Quality Assurance/Quality Control measures presented in Exhibit A.

STEP 8 - A report will be prepared that documents the closure activities. The closure report will include a description of the drainage structures, dates of closure activities, volumes of material excavated for off-site transportation and disposal, endpoint results, final status of drainage structures (i.e., backfilled or active for continued storm water drainage) and copies of all waste disposal manifests.

A summary of drainage features requiring USEPA UIC closure for the Manhasset, Massapequa and Island Park substations are provided in Table 3-1. The drainage features requiring UIC closure/remediation are also illustrated on Figures 3-1 through 3-3 for the Manhasset, Massapequa and Island Park substations, respectively. The drainage structures will be observed in the field to determine if UIC closure or soil sampling (provided soil samples were not previously collected from the structure) is warranted. It should be noted that any newly discovered UIC drainage structure will be addressed according to the procedures in this UIC Closure Plan. Similarly, the regulatory agencies reserve the right to split soil samples collected during the implementation of the Investigation Work Plan or UIC Closure Plan. The Department, in coordination with the NCDH and USEPA, will ultimately determine if closure is warranted for a drainage structure regulated by the USEPA UIC Program.

Table 3-1
Long Island Rail Road
Manhasset, Massapequa and Island Park Substations

SUMMARY OF UIC DRAINAGE STRUCTURES

Substation	UIC Drainage Structure	Phase II Boring Location	Comments
Manhasset-N10	Dry Well	MHSBB-04	None
	Rectifier Floor Drain	MHSBB-01	None
	Water Trough Pit Floor Drain	MHSBB-02	None
	Conduit Pit Floor Drain in Transformer Yard	MHSBB-03	UIC closure may be warranted based on field observations.
Massapequa-S15	Dry Well to West of Substation	MSSB-04	None
	Discharge of Two Interconnected Drain Pipes Exiting the West of the Substation	None	UIC closure may be warranted if located during excavation and determined to be associated with an active drainage structure.
	Positive Breaker Cable Pit Floor Drain	MSSB-03	UIC closure may be warranted based on field observations.
	Control Communications Pit Floor Drain	MSSB-05	UIC closure may be warranted based on field observations.
	Water Meter Pit	MSSB-07	UIC closure may be warranted based on field observations.
Island Park-L03	Lavatory Septic Tank and Tile Field	None	None
	North Dry Well	IPSB-06	UIC closure may be warranted if located during excavation and determined to be active.
	South Dry Well	IPSB-07	UIC closure may be warranted if located during excavation and determined to be active.
	Rectifier Dry Well	None	UIC closure may be warranted if located during excavation and determined to be active.
	Water Meter Pit	IPSB-03	UIC closure may be warranted based on field observations.

LEGEND

- FLOOR DRAIN (F.D.)
- CHAIN LINK FENCE
- ESTABLISHED PIPE CONNECTION BASED ON D&B'S FLUSH TEST
- UIC DRAINAGE STRUCTURE

APPROXIMATE GROUNDWATER FLOW DIRECTION

DRAINAGE SWALE

4 WOODEN R.R. TIES

FORMER RECTIFIER PIT

WATER TROUGH PIT

TRANSFORMER YARD

DRAIN THROUGH WALL

SLOP SINK

METAL PLATE COVERED CONDUIT PIT

METAL PLATE COVERED CONDUIT PIT

DRY WELL

EXISTING RAIL ROAD TRACK

0 5 10

SCALE IN FEET

SOURCES: AVAILABLE LONG ISLAND RAIL ROAD CONSTRUCTION DRAWINGS & D&B's FIELD OBSERVATIONS

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LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN
LOCATION OF UIC DRAINAGE STRUCTURES

MANHASSET SUBSTATION – N10

FIGURE 3–1

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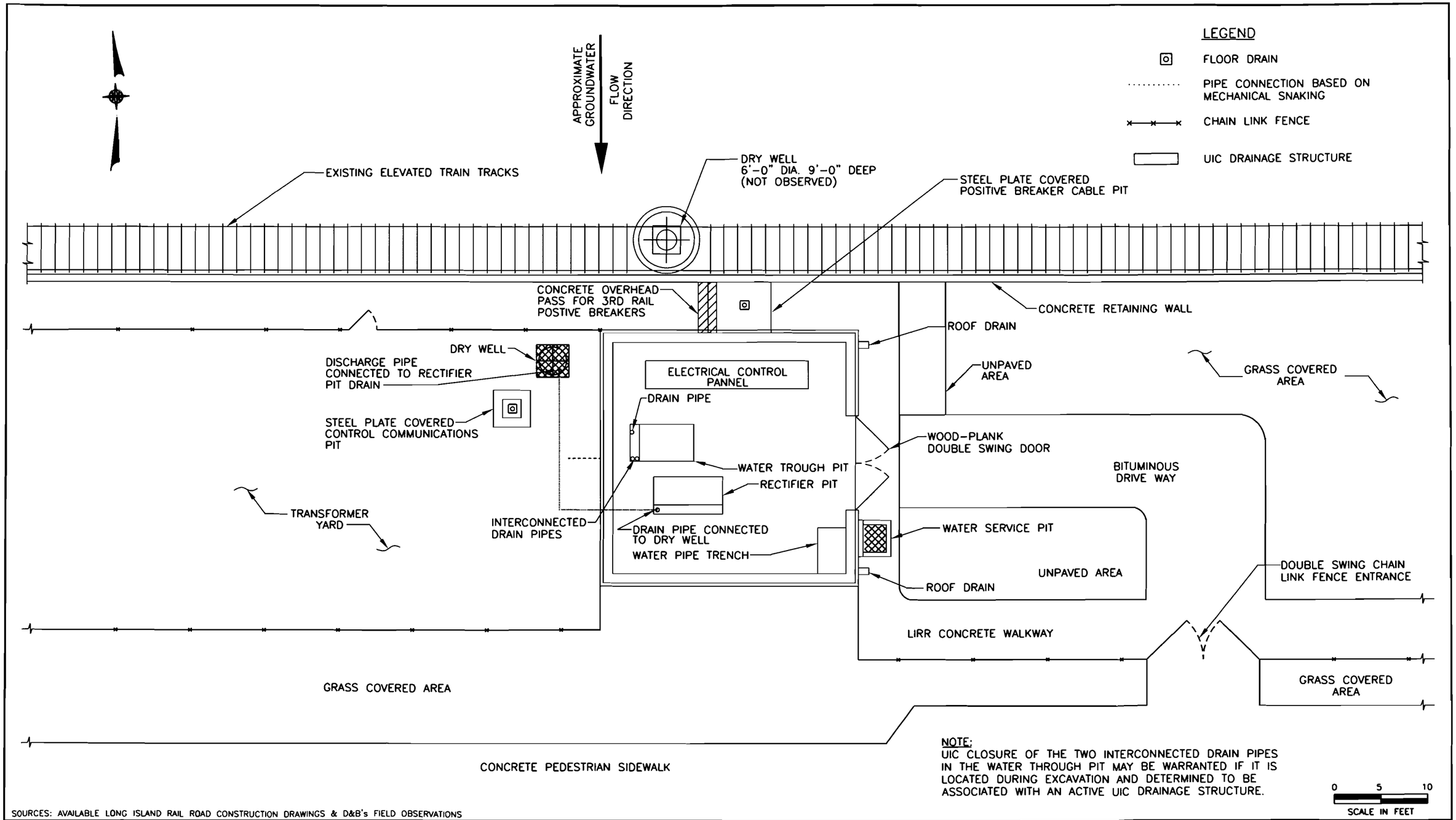

SOURCES: AVAILABLE LONG ISLAND RAIL ROAD CONSTRUCTION DRAWINGS & D&B's FIELD OBSERVATIONS

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LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN
LOCATION OF UIC DRAINAGE STRUCTURES

MASSAPEQUA SUBSTATION – S15

FIGURE 3–2

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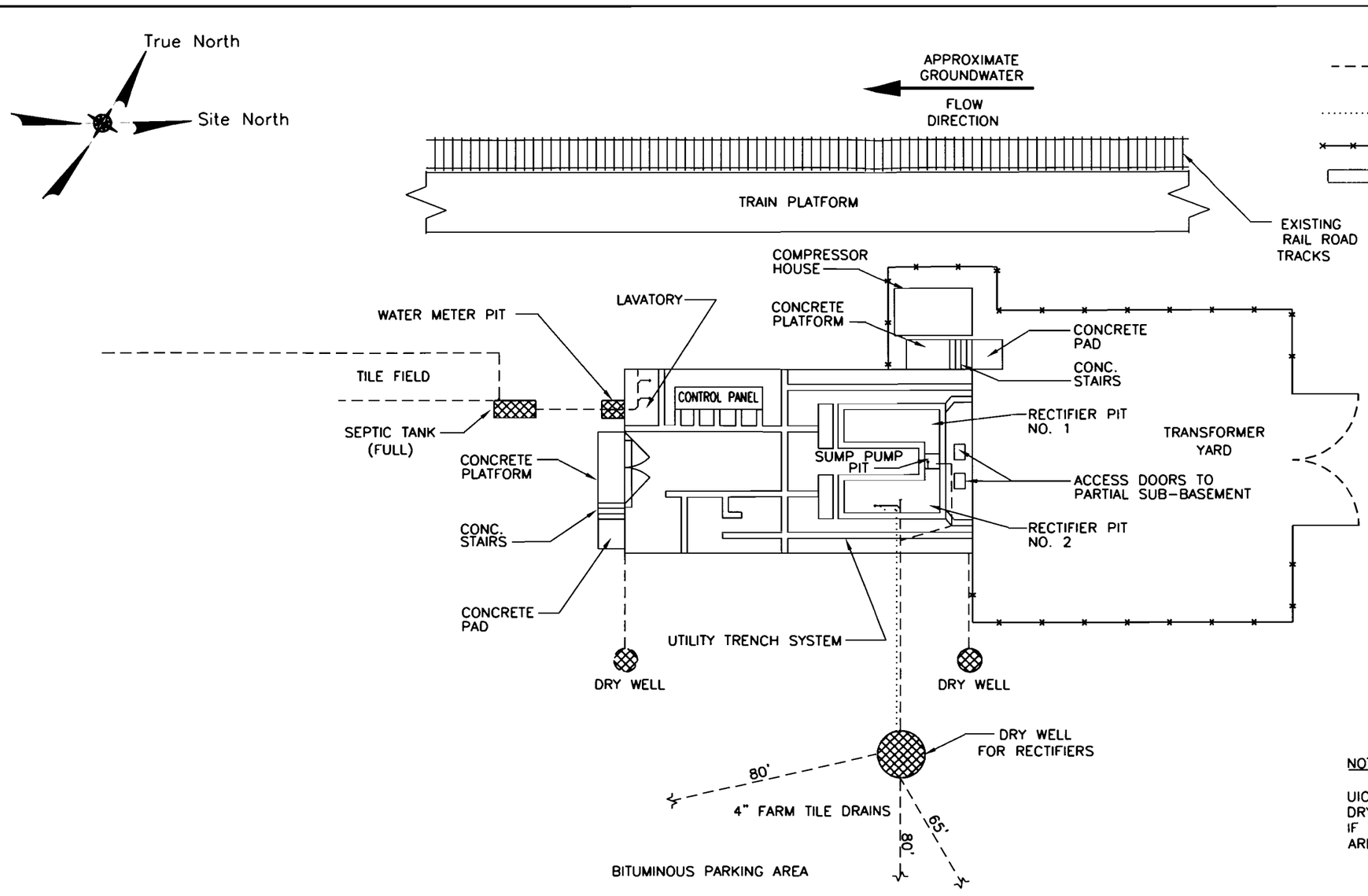

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SOURCES: AVAILABLE LONG ISLAND RAIL ROAD CONSTRUCTION DRAWINGS & D&B's FIELD OBSERVATIONS

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LONG ISLAND RAIL ROAD
UIC CLOSURE PLAN
LOCATION OF UIC DRAINAGE STRUCTURES

ISLAND PARK SUBSTATION –L03

EXHIBIT A

QUALITY ASSURANCE/QUALITY CONTROL

1.0 INTRODUCTION

The following section, entitled "Exhibit A - Quality Assurance/Quality Control" provides detailed procedures to be followed to ensure that analytical data obtained during closure operations are representative, complete and comparable. In addition, all pertinent QA/QC procedures provided in the Investigation Work Plan dated September 2002 and subsequent Addenda will be followed during the implementation of this UIC Closure Plan.

1.1 Sampling Procedures

Environmental samples collected during closure activities will be collected according to the following procedures.

Soil Samples

1. Be certain that the sampling equipment (stainless steel ladle or coring device) has been decontaminated utilizing the procedures outlined in subsection 1.2 of this Exhibit. Decontamination will not be necessary if a disposable sterile polyethylene scoop is utilized.

2. Remove the laboratory precleaned sample containers from the sample cooler, label each container with an indelible marker according to the procedures listed in subsection 1.4 of this Exhibit.

3. Wear disposable coveralls, gloves and eye protection, and be certain that sampling personnel are wearing the appropriate level of health and safety protection.

4. Remove soil from sampling location utilizing the sampling equipment.

5. Transfer the sample into the open sample container and replace the container cover. The container for the volatile organic fraction will be filled first and shall be done in an expeditious manner. Containers for the remaining analytical fractions will then be filled.

6. Return sample container to sample coolers.

7. Decontaminate the sampling equipment according to the procedures outlined in subsection 1.2 of the Exhibit.

8. Properly dispose of any expendable health and safety gear.

Sludge Samples

1. Be certain that the sampling equipment is decontaminated, if necessary, utilizing the procedures outlined in subsection 1.2 of this Exhibit.
2. Wear disposable rubber gloves and eye protection, and be certain that sampling personnel are wearing the appropriate level of health and safety protection.
3. Remove sludge from sampling location utilizing the sampling equipment.
4. Pour the sample into the sample container taking care not to spill sample on the outside of container or overfill container, and replace cover.
5. Return sample container to the sample cooler.
6. Decontaminate the sampling equipment, if necessary, utilizing the procedure outlined in Section 1.2.
7. Properly dispose of gloves and other appropriate health and safety equipment

1.2 Decontamination Procedures

All nondisposable sampling equipment will be decontaminated at appropriate intervals (e.g., prior to initial use and prior to moving to a new sampling location).

Stainless steel sampling equipment decontamination procedures will be as follows:

1. Wash equipment thoroughly with nonresidual detergent (alconox) and clean potable tap water using a brush to remove particulate matter or surface film.
2. Rinse thoroughly with distilled water and air dry.
3. Wrap completely in clean aluminum foil with dull side against the equipment.

Sampling equipment will be decontaminated over a drum specifically used for this purpose. All equipment will be decontaminated before proceeding to the work area. All decontamination generated wastes will be contained in 55-gallon drums prior to proper off-site shipment.

1.3 Chain of Custody

The Chain of Custody form will be completed and signed by the person performing the sampling. The original of the form travels with the sample and is signed with date and time noted each time the sample is relinquished to another party, until it reaches the laboratory or analysis is completed. The field sampler will keep one copy and a copy will be retained for the project file.

In general, Chain of Custody forms are provided by the laboratory contracted to perform the analytical services. At a minimum, the following information will be provided on these forms:

- Project name and address;
- Project number;
- Sample identification number;
- Date;
- Time;
- Sample Location;
- Sample type;
- Analysis requested;
- Number of containers;
- Remarks;
- Sampler's(s) name(s) and signature(s); and
- Spaces for relinquished by/received by signature and date/time.

1.4 Labeling

Sample bottles used to collect samples will be labeled with an indelible marker and will include the following information:

- Date and time of sample collection;
- Name of sample collector;
- Sample location; and
- Type of sample analysis.

1.5 Performance and System Audits

A New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP) certified laboratory will be contracted to perform analytical services for this project.

1.6 Corrective Action

A NYSDOH ELAP-certified laboratory meeting requirements for corrective action protocols, including sample "clean up" to attempt to eliminate/mitigate "matrix interference" will be utilized for this project.

1.7 Matrix Spikes/Matrix Spike Duplicates and Spike Blanks

Matrix spikes and matrix spike duplicates will be used by the contracted laboratory as part of its internal Quality Assurance/Quality Control (QA/QC) Program. This QA/QC check will be consistent with the 2000 New York State Department of Environmental Conservation Analytical Services Protocols (NYSDEC ASP). These protocols provide for a spiked blank for all organic analyses of matrix spikes and spike duplicates.

1.8 Method Blanks

Method blanks are analyzed daily by the laboratory to check for contamination which may be introduced to the sample as a result of the analytical procedure itself. In instances where a particular compound is found in the method blank and in the environmental sample, the concentration in the environmental sample must be at least 10 times that of the method blank in order for the result to be valid.

1.9 Field Blanks

Equipment field blanks will be collected during the sample collection program from decontaminated sampling equipment, if deemed applicable and appropriate. The field blank will be collected by pouring distilled water, provided by the laboratory, over the decontaminated sampling device and collecting the liquid in a sampling container for laboratory analysis to check for adequacy of decontamination procedures.

1.10 Documentation, Data Reduction and Reporting

A NYSDOH ELAP-certified Contract Laboratory Program (CLP) laboratory meeting requirements for documentation, data reduction and reporting will be chosen to perform the analytical testing for this project. All data will be cataloged according to sampling location and sample identification nomenclature determined in the field by the field project