INTERIM REMEDIAL MEASURE
Soil Removal Summary Report

Saratoga Tree Nursery
Inactive Hazardous Waste Site

Route 50 Facility
Saratoga County, N.Y.
Site No. 5-46-043

February 1996

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IRM Soil Removal Program

IRM SOIL REMOVAL PROGRAM

The Off-Site investigation identified six private properties which warranted cleanup based on the levels of DDT detected in soil (Reference: Preliminary Investigation Report-Offsite Sampling Program, June 1995). In response to these findings the NYSDEC initiated an Interim Remedial Measure (IRM) Soil Removal Program to address the identified contamination. The NYSDEC performed this program during the period from September 11, 1995 to October 6, 1995 and worked with residents regarding the remedial activities on their property. This IRM Summary Report presents the scope of work performed during the IRM program. Section 1 describes the steps undertaken during the excavating, stockpiling, and storage of the soil. Section 2 describes procedures utilized during the sampling and analysis of the soil for cleanup confirmation. Section 3 includes a summary of all costs associated with the IRM. Figure 1 shows the location of the site and Figure 2 shows the site map.

1.0 Soil Excavation, Stockpiling and Storage

The IRM program initially involved excavation, backfilling with topsoil and seeding to address DDT contamination identified on six private residential properties situated adjacent to the Nursery facility. During the IRM, a seventh property was added based on confirmatory sample results. This section details the actions taken to remove the contaminated soil and restore the properties to their undisturbed condition. The NYSDEC developed a Health and Safety Plan (HSP) which addressed potential hazards, personal protection equipment, emergency response procedures, etc. associated with the IRM Soil Removal Program Work Plan. All work was performed by NYSDEC staff from the Division of Lands and Forests and the Division of Hazardous Waste Remediation during the IRM Program, unless otherwise noted.

1.1 Site Preparation/Clearing

Implementation of the IRM commenced on September 11, 1995 with a Health and Safety Meeting which included all personnel expected to work on the IRM. Initial limits of the excavations were surveyed and staked out based on the results of the off-site sampling. Site preparation activities which were initiated during August, continued with site clearing and preparation, tree removal and fence removal. A chain link fence separated the Nursery facility and the affected residential properties which are situated on Hathorn Blvd. in the Geyser Crest Community. The six properties which were initially the focus of the IRM are located at [redacted] Later confirmatory sampling identified [redacted] as a property also requiring remediation. A row of cedar trees, located on the Nursery property adjacent to the fence, serves as a visual barrier. To minimize the impact of the excavation program on the residents and their property, the NYSDEC accessed the backyards from the Nursery property. Access-ways for excavating equipment were established from the Nursery to the private properties.

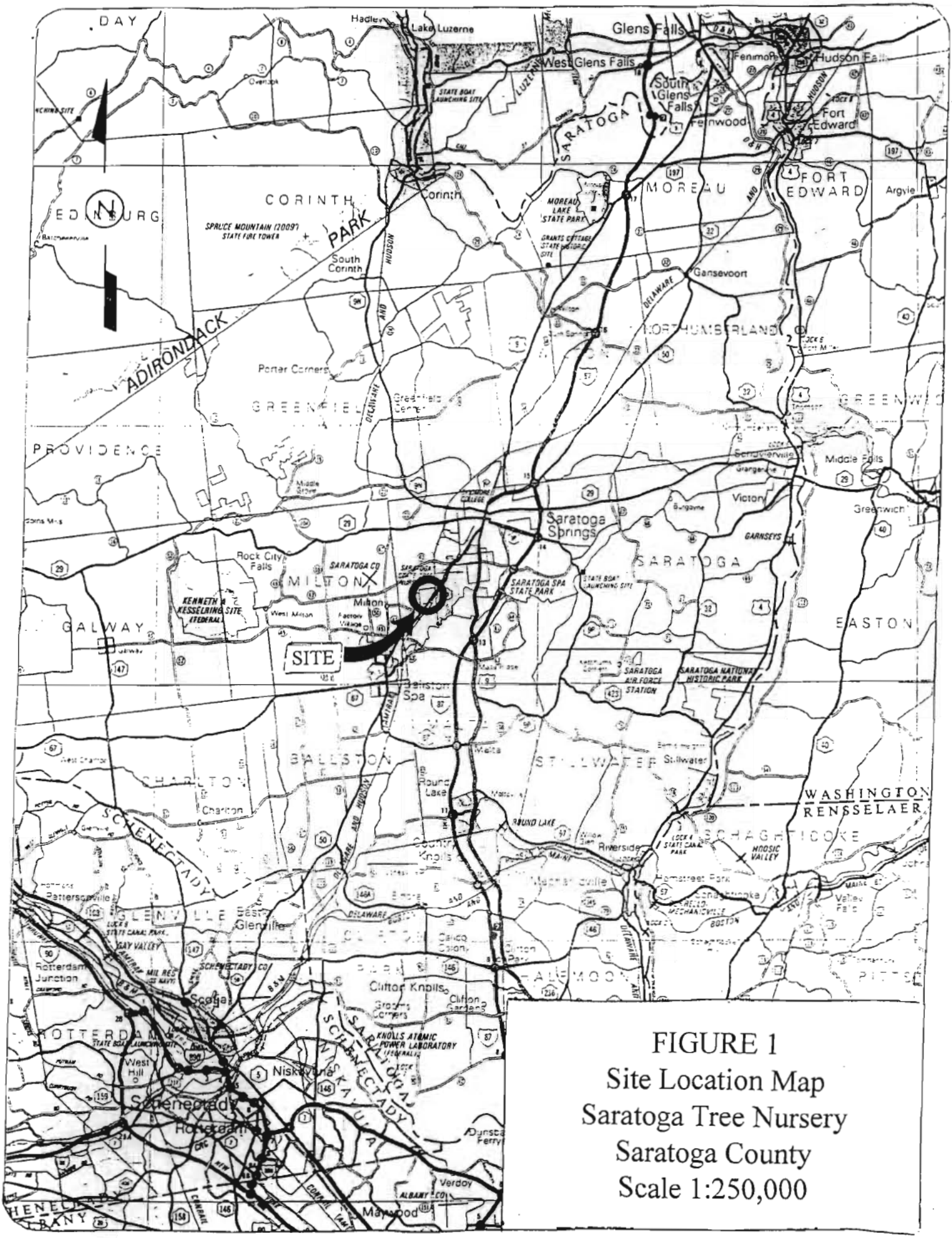


FIGURE 1
Site Location Map
Saratoga Tree Nursery
Saratoga County
Scale 1:250,000

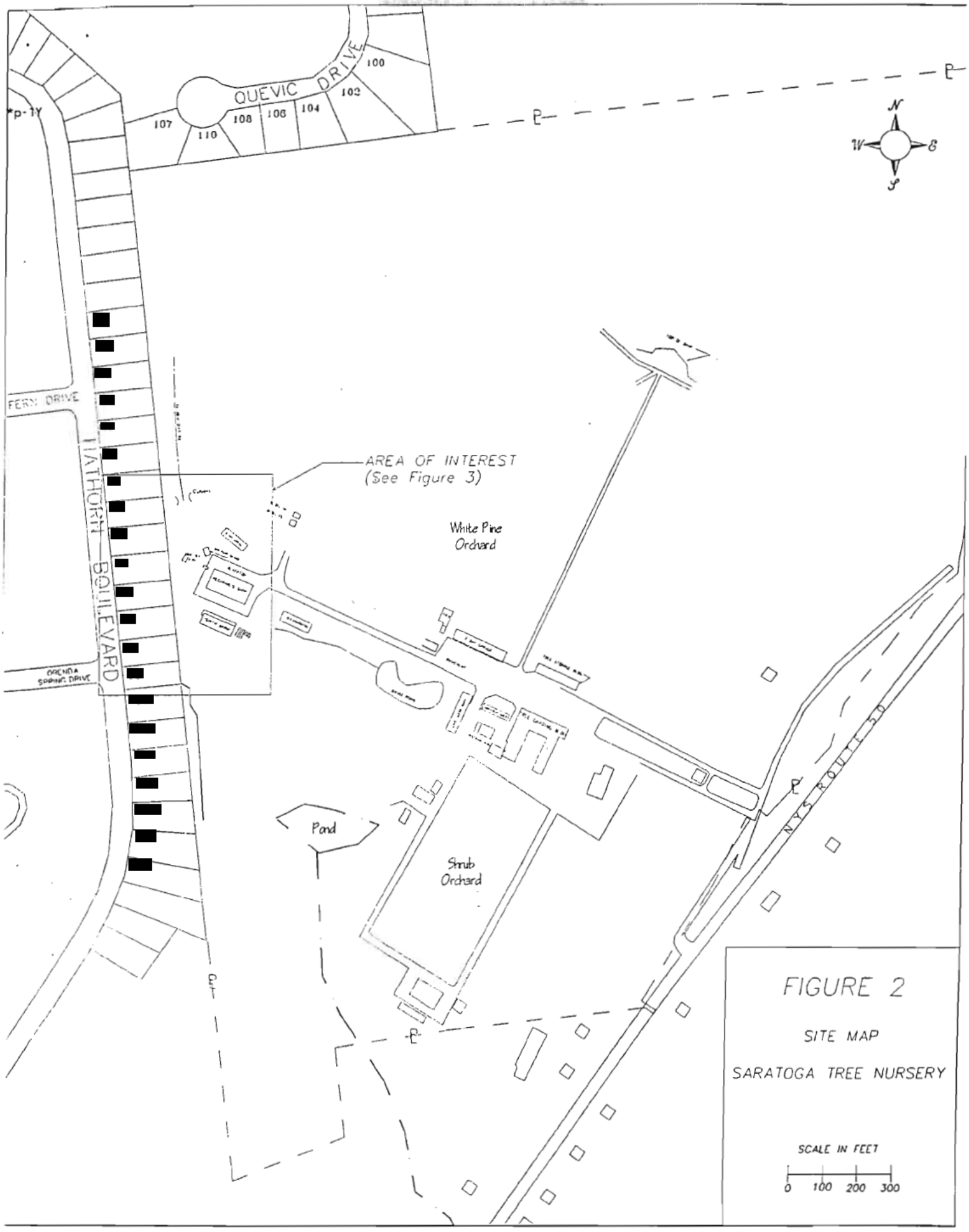


FIGURE 2

SITE MAP

SARATOGA TREE NURSERY

SCALE IN FEET

0 100 200 300

To complete the IRM and to remove soil from the Nursery property behind the cedar trees, the Nursery's fence was removed as needed from the areas of concern. Additionally, fences which separate the private properties from one another (typically six foot stockade) were temporarily removed from the area subject to remediation, to facilitate excavation activities and property access. As fencing was removed, lot corners were marked for future reference. Temporary fencing was erected to provide an exclusion zone in the area of construction and to maintain the enclosure of each backyard. The fencing typically ran parallel to the existing fence line, approximately thirty feet from the property boundary. The temporary fencing was heavy gauge chain link, 72" inches in height.

Originally, access from the Nursery to contaminated areas was to be provided at three points to minimize impacts to the cedar trees situated along the property line. It was subsequently decided to access each property individually in order to minimize disturbance of the individual properties. Therefore, access from the Nursery to each contaminated area was provided separately. While care was taken to avoid damaging the cedar trees situated along the property line, it was necessary to remove some cedar trees to establish access for the equipment used during the IRM program. Also, some trees were unavoidably damaged during the removal of large trees in the areas to be addressed. At the completion of the IRM program these cedar trees were to be replaced, however, Nursery staff advised replacement be postponed until the Spring of 1996 to better assure their viability.

Efforts were made to protect mature trees situated on private properties. It was necessary, however, to remove a number of trees that hindered access. As a component of the IRM, several trees were removed by Nursery staff and six stumps and one tree were removed by an outside contractor.

Following the tree removal, all brush, undergrowth, leaf compost, and rubbish located in areas of concern were removed. Brush, undergrowth, and leaf compost were disposed of in the composting area at the Nursery. Wood debris was disposed in the wood/shade frame disposal area. One property contained large amounts of wood debris, plastic, scrap metal, etc. All scrap metal was decontaminated and sent to a recycling center. Plastic, etc. was disposed of with the contaminated soil as decontamination of this material would be difficult.

Since access was provided to each contaminated zone separately, the potential for contamination of clean areas by truck tires, etc., was no longer a concern. Therefore, landscape fabric was not placed across clean zones during these activities. Every effort was made to avoid the introduction of contamination into areas which have been declared clean.

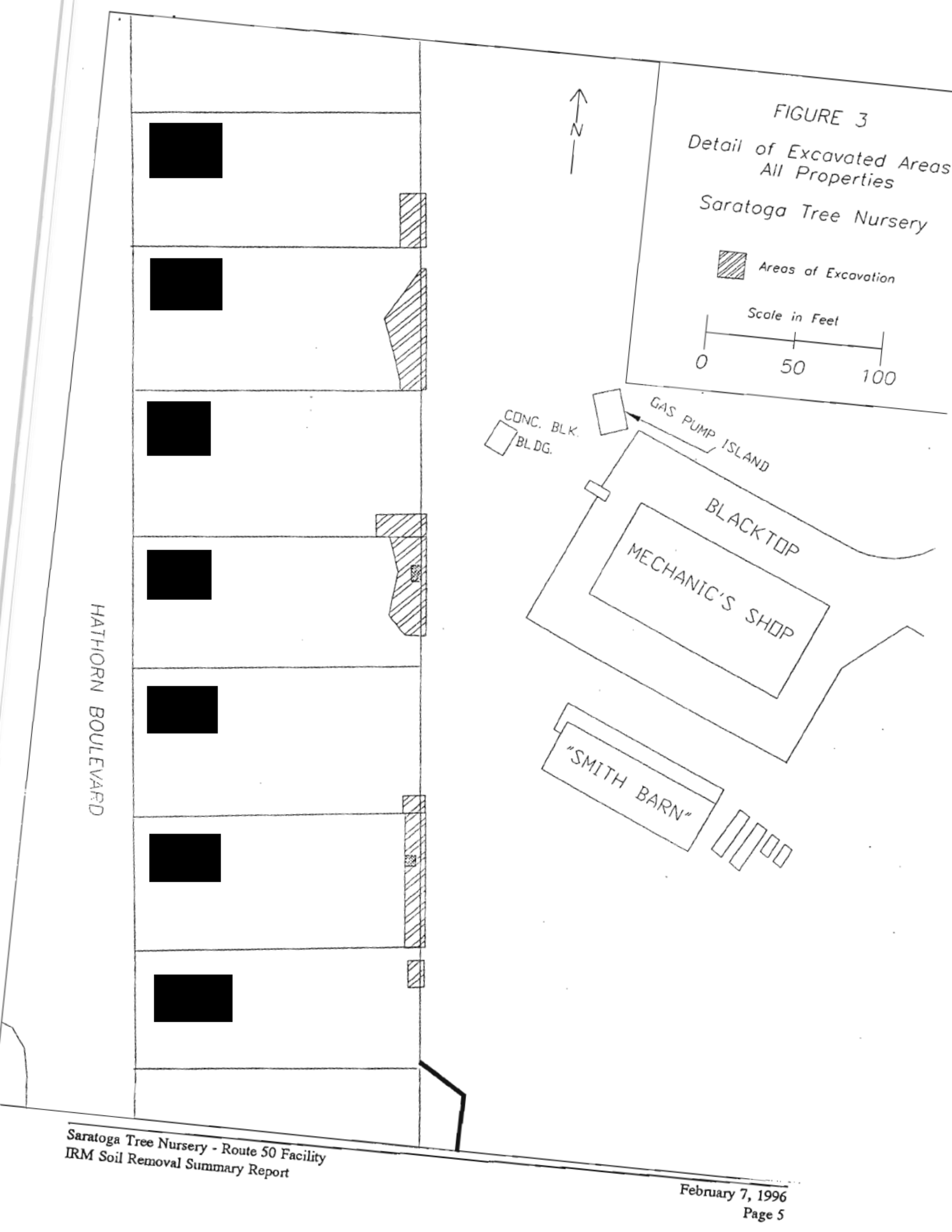


FIGURE 3
Detail of Excavated Areas
All Properties
Saratoga Tree Nursery
Areas of Excavation
Scale in Feet
0
50
100
N
CONC. BLK. BLDG.
GAS PUMP ISLAND
BLACKTOP
MECHANIC'S SHOP
"SMITH BARN"
HATHORN BOULEVARD

1.2 Excavation

Once an access way was established and the surface was prepared, excavation activities commenced. Figure 3 shows the areas of excavation. These areas were staked and flagged. To avoid re-contamination of excavated areas, excavation work progressed toward the Nursery access point. Excavation was accomplished in most areas with a small backhoe and bobcat excavator. In areas close to mature trees, hand shovels were utilized to the extent practicable in order to protect tree root systems. Nursery foresters provided guidance when working around trees to ensure their protection.

Excavation depths were based on sampling data generated during the Off-Site investigation. Confirmatory sampling was conducted subsequent to initial excavations to determine if cleanup levels had been obtained. All soil with DDT concentrations greater than the established remedial objective of 2 ppm was removed. Excavations were typically carried out to depths of 1.5 to 2 feet below ground surface. The three exceptions to this are as follows:

- One 10'x10' area at [redacted] identified during the off-site investigation was excavated to a depth of eight feet deep due to the presence of petroleum and DDT contamination.
- One 5'x5' area at [redacted] was excavated to a depth of 2.5 feet due to the presence of DDT contamination identified at greater depths during the Off-site Investigation.
- The excavation at [redacted] was advanced to a depth of 2.5 feet because confirmatory samples collected from the excavation floor at a depth of 1.5 feet showed elevated levels of DDT.

Excavations remained open until analytical data was available to confirm the excavation limits (horizontal and vertical) had achieved the remedial objective of 2 ppm. Results were typically available within 24 hours. Areas where tree root systems were exposed were kept moist prior to backfilling to minimize impact to trees.

Excavation of contaminated soil on Nursery property between the cedar trees and the fence was also conducted as a component of the IRM. Excavations extended approximately three feet east of the fence line (typically). Care was necessary in this area due to the presence of a buried telephone cable.

The total volume of soil removed as part of the IRM program was approximately 250 cubic yards. Excavated soil was transported from the areas of contamination to the stockpile area on the

Nursery by a small dedicated dump truck. The truck was stationed on the Nursery property line to avoid direct entry into the excavation. Water was used as necessary, to suppress dust during excavation activities.

When excavation was complete, clean backfill was placed in the excavation. The clean fill was transported in a dedicated truck. Each property was backfilled following excavation as soon as the results from the confirmation samples were available showing that cleanup objectives had been attained. The topsoil backfill was on-site compost mixed with sand from on off-site source. Topsoil was subjected to a full laboratory analysis to ensure the fill was clean. Sufficient backfill was placed to return yards to their former grade. When clean fill was in place and properly compacted, grass seed was placed in all areas affected by the IRM. Areas restored will be reviewed in the spring to assure that the grass has taken and if necessary, to provide additional topsoil in areas which have settled appreciably.

When the removal was complete, the construction fencing was removed and all original fencing restored. Every effort was made to protect mature trees on private property. However, these trees may have been stressed or otherwise impacted which will not become apparent for several years. Affected trees will be monitored for the next five years by Nursery staff and the NYSDEC will appropriately address those trees that may have been impacted by the removal activities.

The limits of the excavations, confirmatory sample locations, and the sample results are included in Appendix A.

1.3 Stockpiling of Contaminated Soil

Excavated soil was stockpiled on the Nursery property, west of the Loading Dock, in the central portion of the Nursery (ref. Figure 2). The stockpile area was defined by placement of wood timbers. Contaminated soil was placed on landscape fabric. The soil stockpile was covered with an impermeable, UV resistant plastic. The plastic was placed to preclude dust generation and infiltration of precipitation. The stockpiled soil was covered with the plastic following daily operations. The edges of the plastic were weighted down to keep the plastic in place. The pile was shaped with a Bobcat to prevent ponding of water. The contaminated soil will be stockpiled on nursery property until the remedial work associated with on-site contamination is complete. Weekly inspections of the stockpile will be conducted to detect and repair any damage to the cover.

2.0 Soil Sampling

A remedial goal of 2 ppm total DDT, DDE, DDD had been established for the private properties. Confirmatory sampling was conducted during excavation activities to ensure all contaminated soil

was removed. During excavation(s), 46 samples were collected for analysis from the excavation floor and walls, prior to backfilling. Samples were analyzed with DDT Immunoassay Test Kits to provide results quickly, typically within 24 hours.

2.1 Sample Custody

Chain-of-Custody forms were filled out in order to provide an accurate written record that can be used to trace the possession and handling of a sample from its collection through its analysis. This form accompanied the sample containers during selection and preparation at the laboratory, during shipment to the field, and during return shipment to the laboratory. A sample is in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up; or
- Kept in a secure area that is restricted to authorized personnel.

Samples were properly stored and meet all holding times required for analysis.

Each sample was labeled with an identification number. Duplicate copies of the Chain of Custody form were filled out. One copy of the form was retained by the samplers, and one form was sealed in a plastic bag and taped inside the lid of the shipping cooler. Samples were hand delivered to the laboratory immediately following collection.

2.2 Sample Documentation

A sampling summary was included in the field note book for each sample taken.

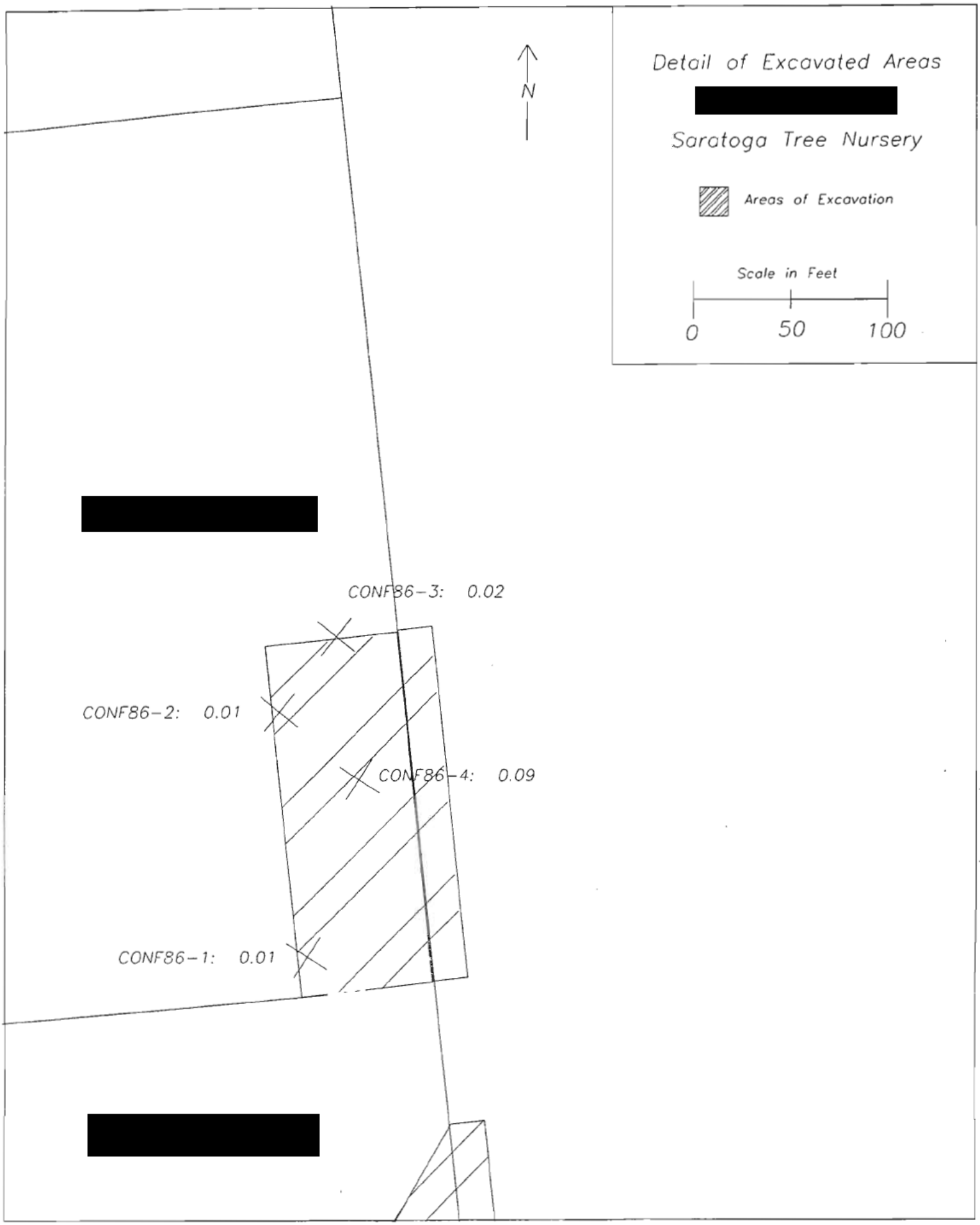
3.0 Project Cost

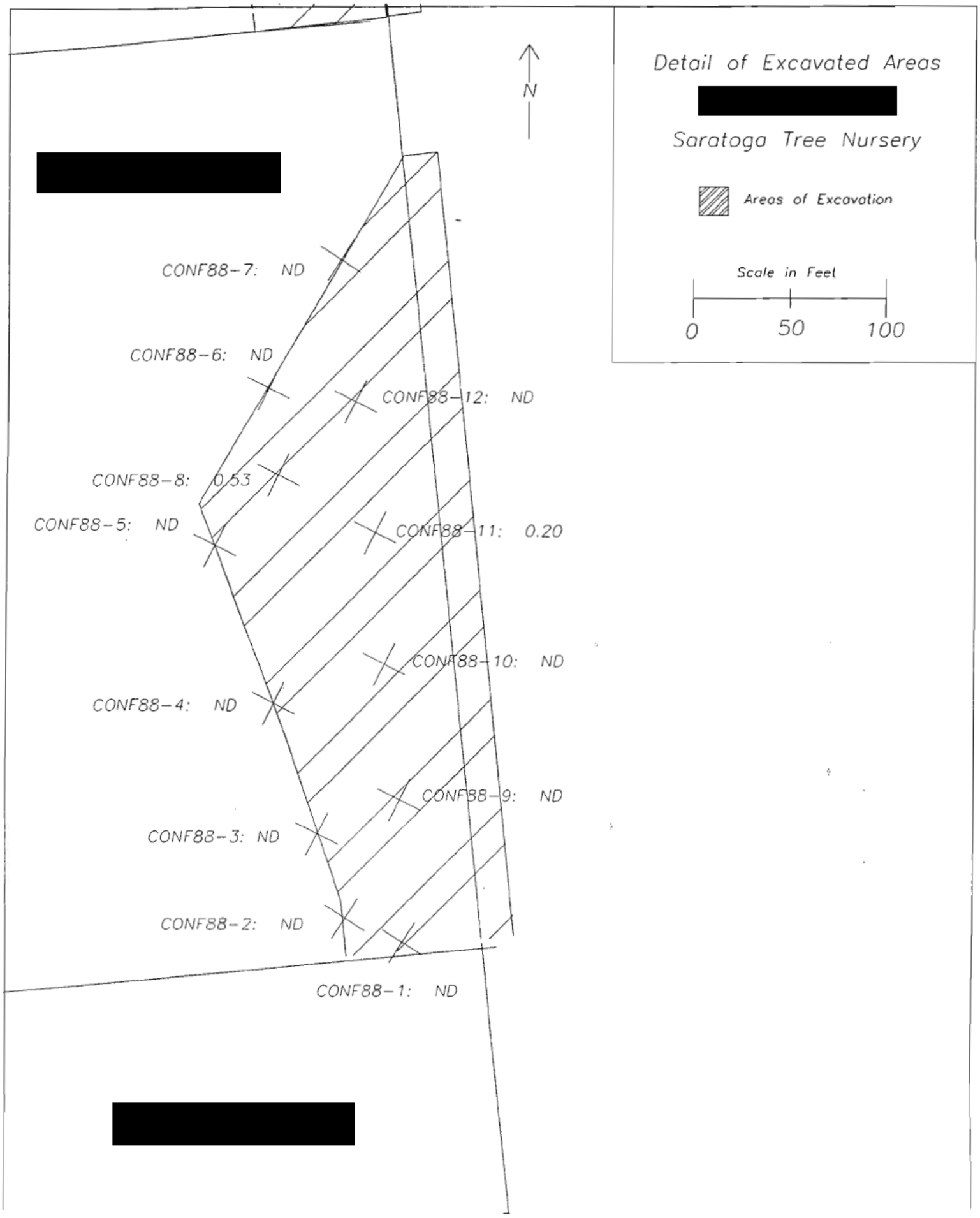
Below is a summary of all project costs.

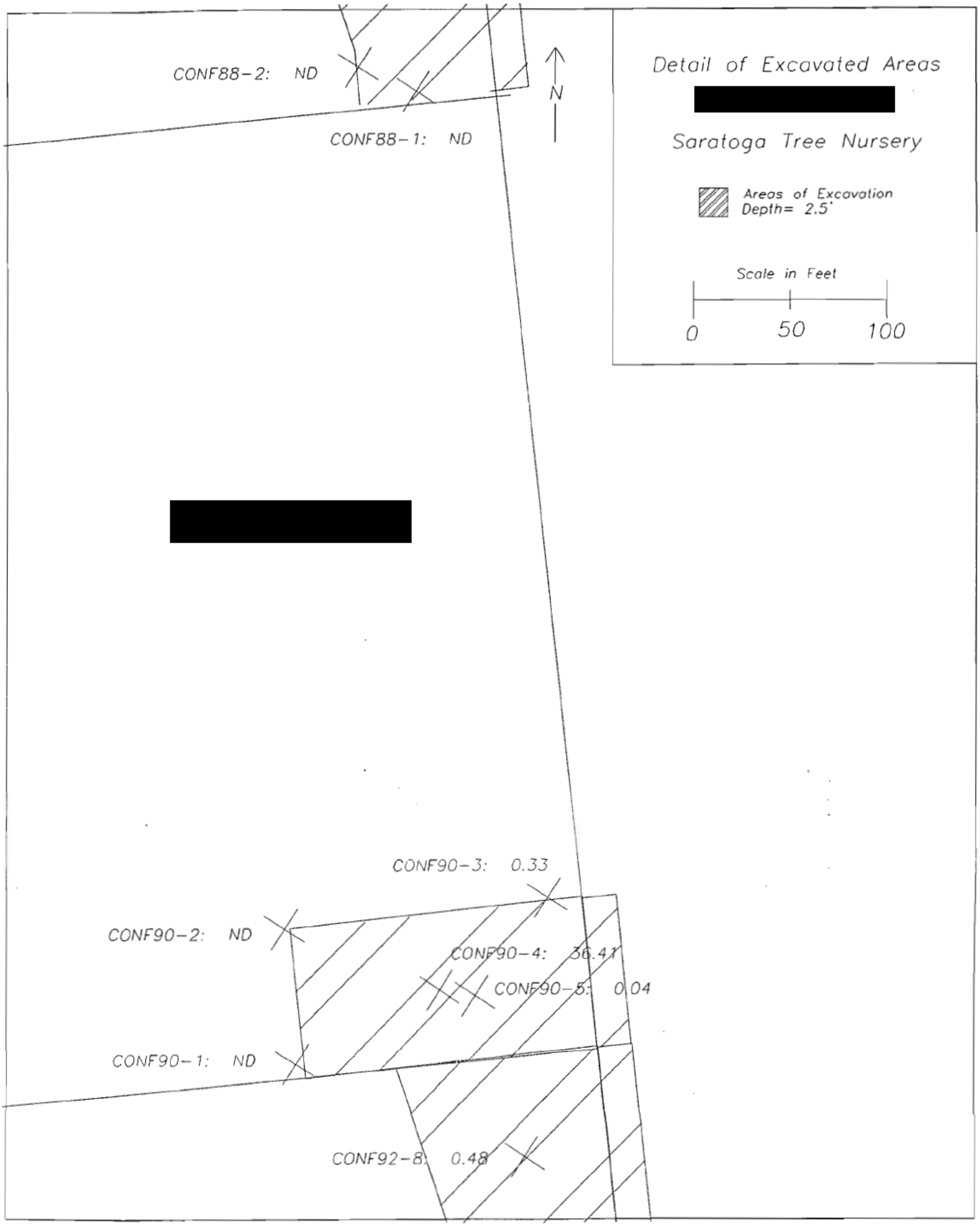
IRM SOIL REMOVAL PROGRAM COST	
LABOR	
Construction	
Engineering & Field Oversite	
Laboratory Analysis	
EQUIPMENT, ETC.	
Backhoe and Bobcat	
Health and Safety Equipment	
40 Hour Health and Safety Training	
Fencing	
Landscape Fabric	
Laboratory Supplies	
TOTAL PROJECT COST	

APPENDIX

AREAS OF EXCAVATION


Detail of Excavated Areas
[redacted]
Saratoga Tree Nursery
Areas of Excavation
Scale in Feet
0
50
100
N
[redacted]
CONF86-3: 0.02
CONF86-2: 0.01
CONF86-4: 0.09
CONF86-1: 0.01
[redacted]


Detail of Excavated Areas
[redacted]
Saratoga Tree Nursery
Areas of Excavation
Scale in Feet
0
50
100
N
[redacted]
CONF88-7: ND
CONF88-6: ND
CONF88-12: ND
CONF88-8: 0.53
CONF88-5: ND
CONF88-11: 0.20
CONF88-10: ND
CONF88-4: ND
CONF88-9: ND
CONF88-3: ND
CONF88-2: ND
CONF88-1: ND
[redacted]


CONF88-2: ND
CONF88-1: ND
N
Detail of Excavated Areas
[redacted]
Saratoga Tree Nursery
Areas of Excavation
Depth= 2.5'
Scale in Feet
0
50
100
[redacted]
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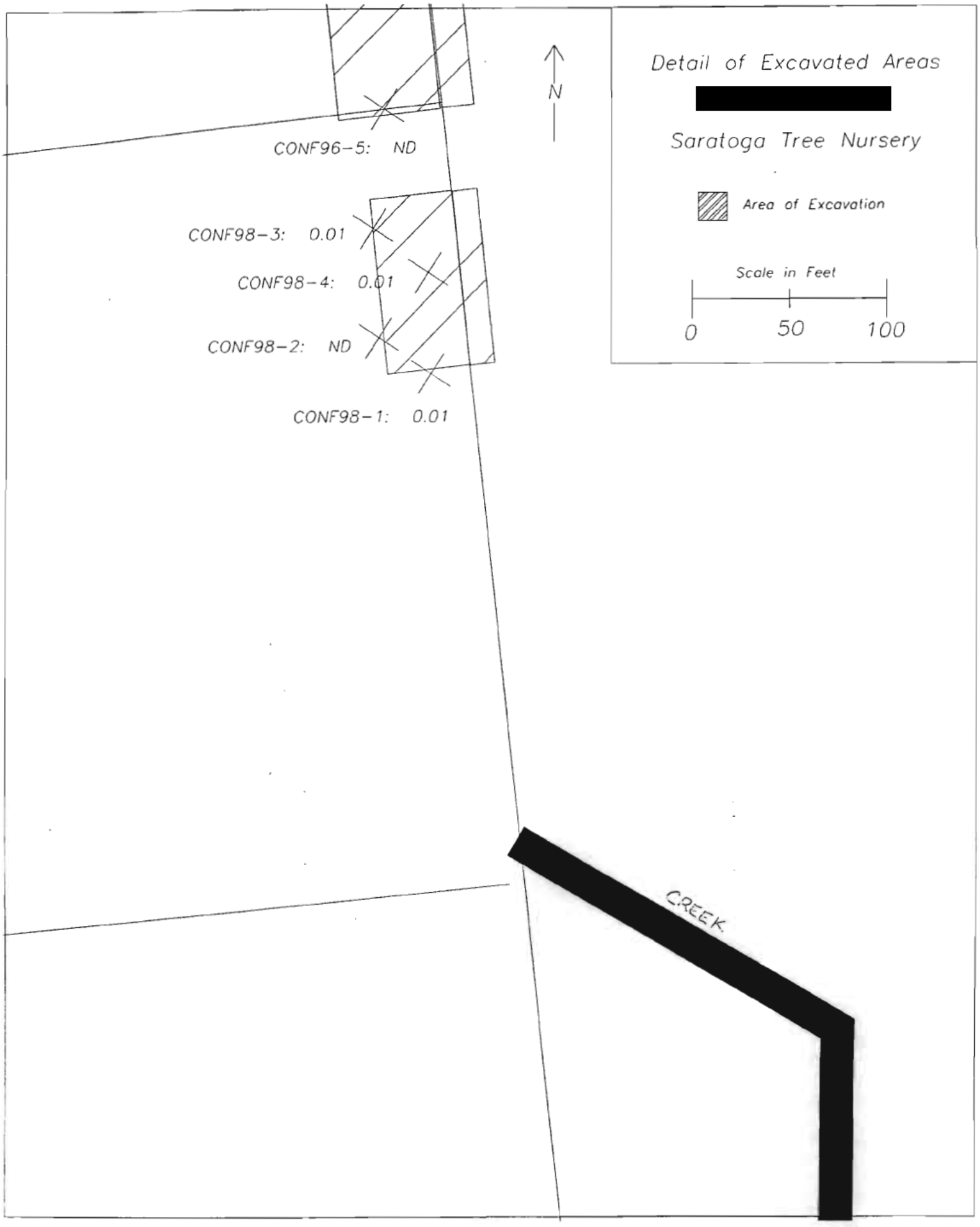
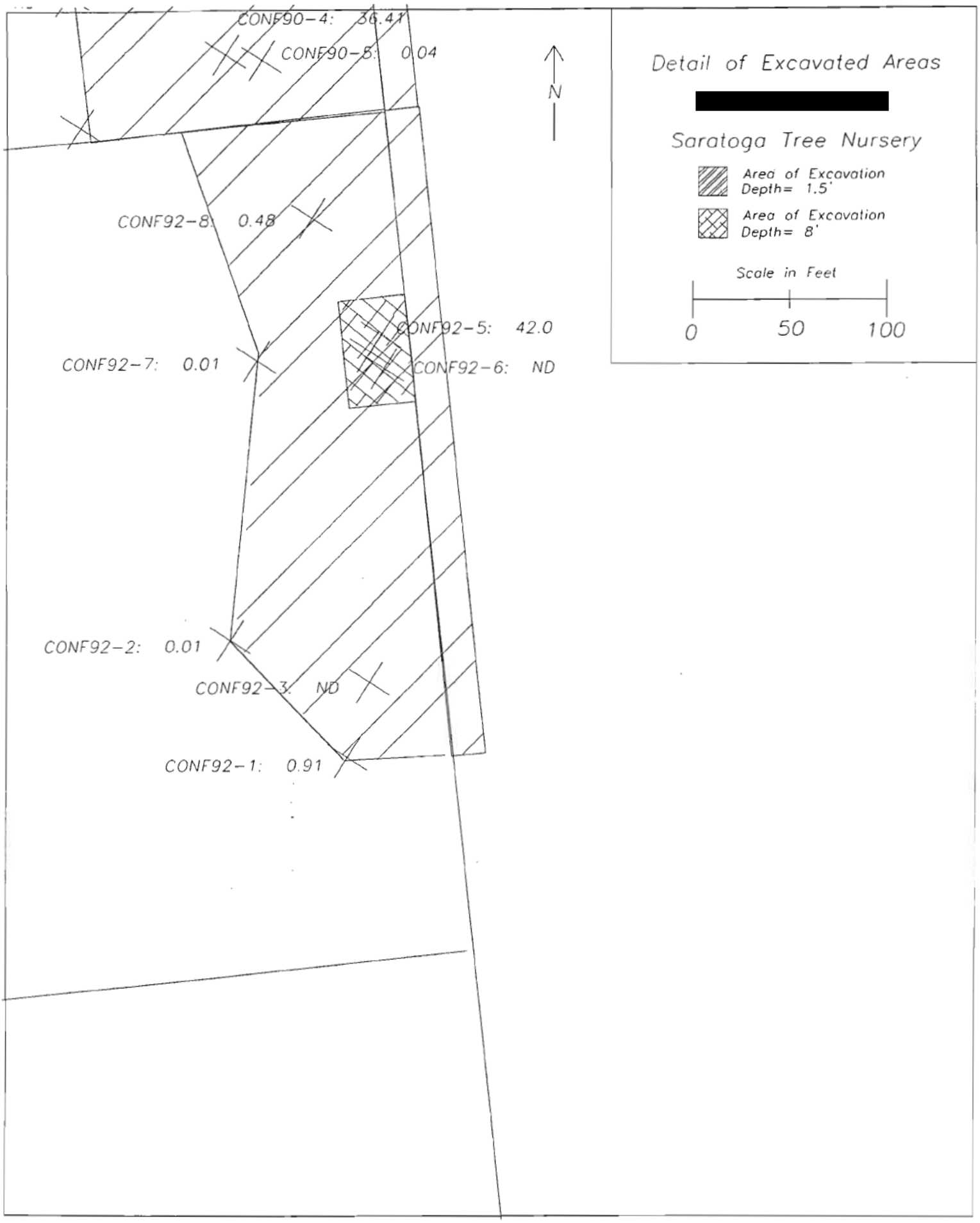
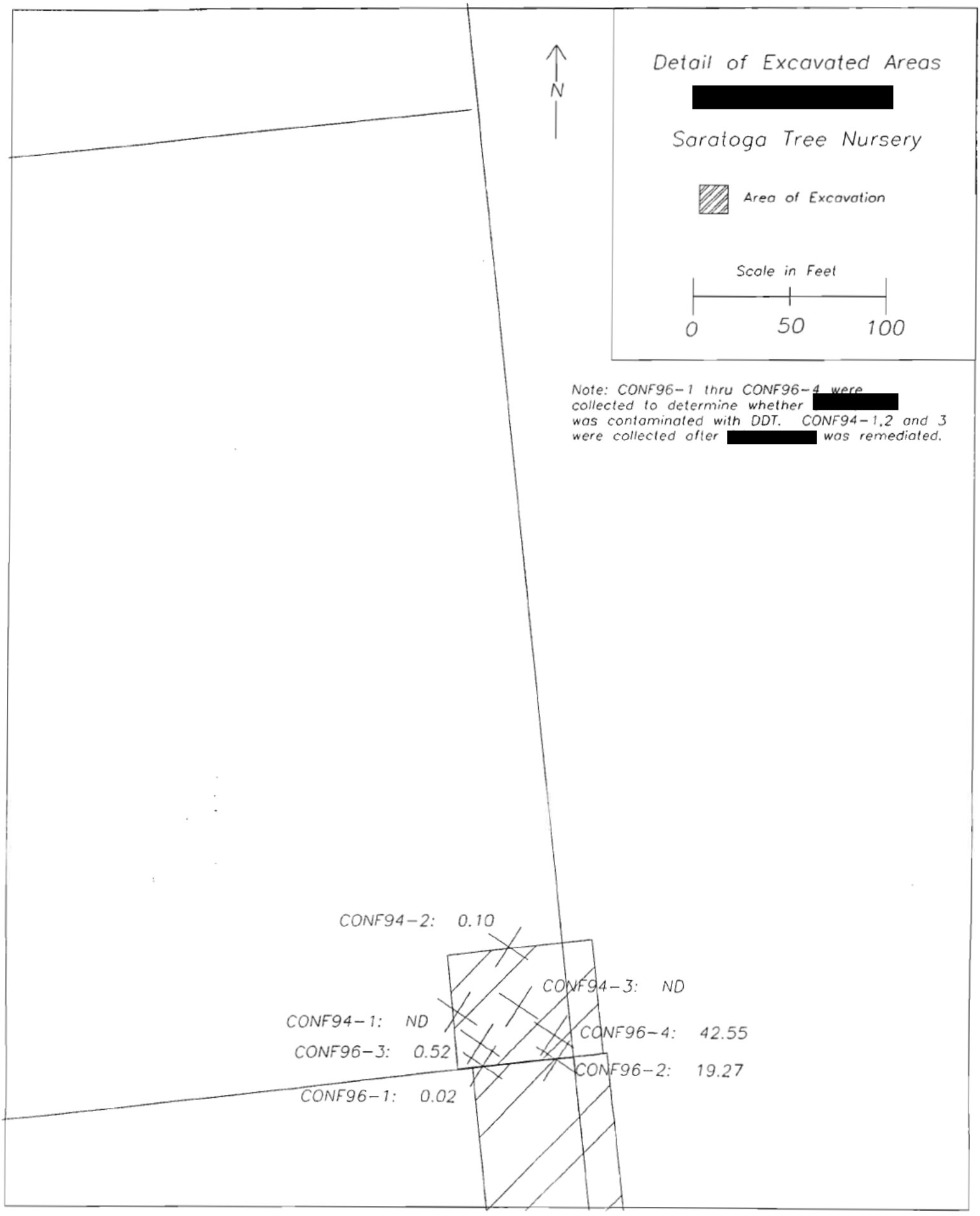
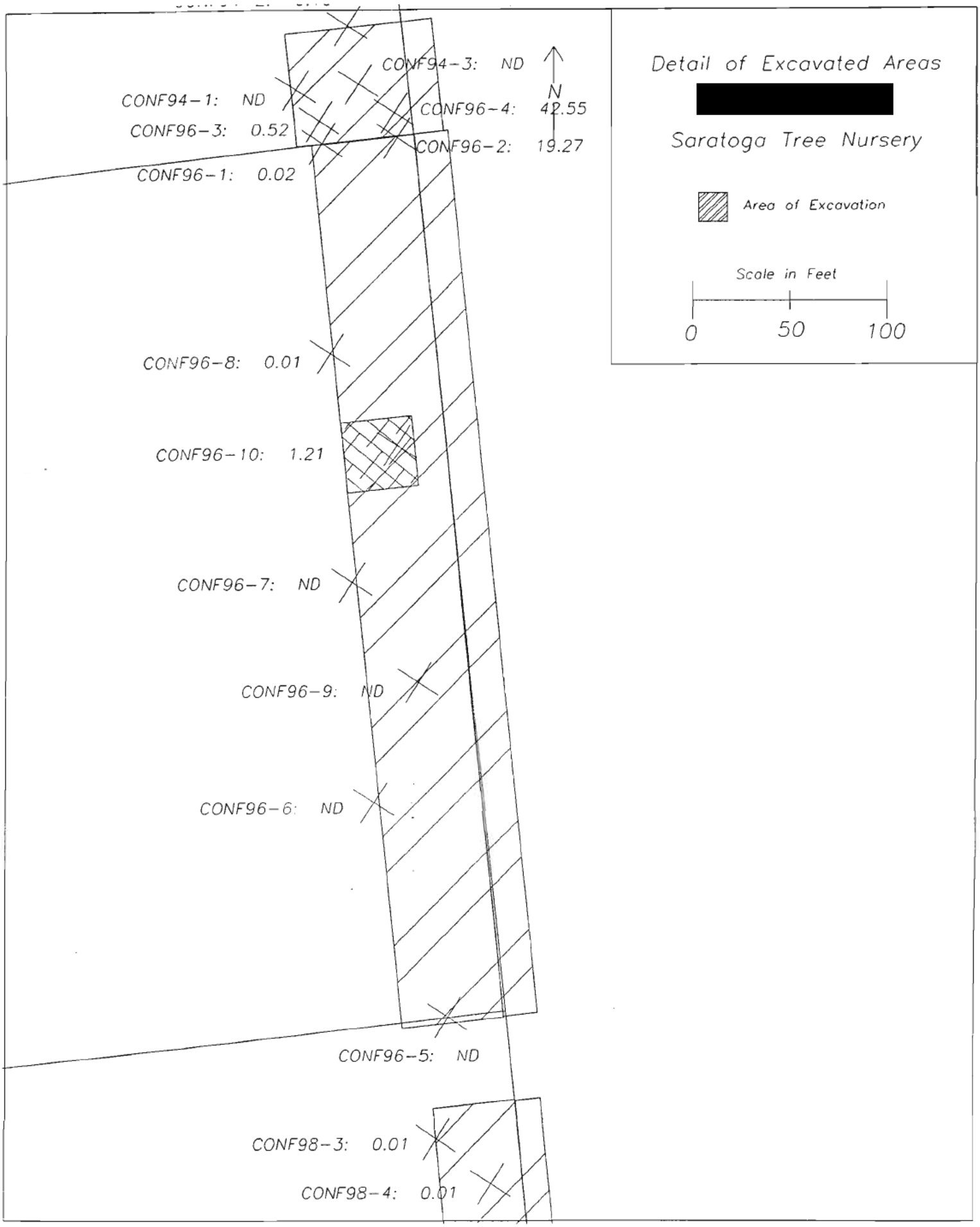
CONF90-2: ND
CONF90-4: 36.41
CONF90-5: 0.04
CONF90-1: ND
CONF92-8: 0.48


Detail of Excavated Areas
Saratoga Tree Nursery
Area of Excavation
Scale in Feet
0
50
100
N
CONF96-5: ND
CONF98-3: 0.01
CONF98-4: 0.01
CONF98-2: ND
CONF98-1: 0.01
CREEK


CONF90-4: 36.41
CONF90-5: 0.04
N
CONF92-8: 0.48
CONF92-5: 42.0
CONF92-7: 0.01
CONF92-6: ND
CONF92-2: 0.01
CONF92-3: ND
CONF92-1: 0.91
Detail of Excavated Areas
[redacted]
Saratoga Tree Nursery
Area of Excavation Depth= 1.5'
Area of Excavation Depth= 8'
Scale in Feet
0
50
100


N
Detail of Excavated Areas
[redacted]
Saratoga Tree Nursery
Area of Excavation
Scale in Feet
0
50
100
Note: CONF96-1 thru CONF96-4 were collected to determine whether [redacted] was contaminated with DDT. CONF94-1,2 and 3 were collected after [redacted] was remediated.
CONF94-2: 0.10
CONF94-3: ND
CONF94-1: ND
CONF96-4: 42.55
CONF96-3: 0.52
CONF96-2: 19.27
CONF96-1: 0.02


CONF94-3: ND
N
CONF94-1: ND
CONF96-4: 42.55
CONF96-3: 0.52
CONF96-2: 19.27
CONF96-1: 0.02
CONF96-8: 0.01
CONF96-10: 1.21
CONF96-7: ND
CONF96-9: ND
CONF96-6: ND
CONF96-5: ND
CONF98-3: 0.01
CONF98-4: 0.01
Detail of Excavated Areas
Saratoga Tree Nursery
Area of Excavation
Scale in Feet
0
50
100