SITE ASSESSMENT REPORT
UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK.

This report is presented to:

New York State Department of Environmental Conservation

This report prepared by:

Unisys Corporation Environmental Affairs Group
for
Unisys Defense Systems, Inc.

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1.0 INTRODUCTION

This document presents data and information related to environmental conditions occurring at the Unisys Defense Systems, Inc. Shipboard and Ground Systems Facility and off site of the facility. This document was prepared in accordance with the terms of the Order on Consent signed by the Unisys Defense Systems, Inc. and the State of New York Department of Environmental Conservation (NYSDEC). The facility has been placed on the State of New York List of Inactive Hazardous Waste Sites. The facility has been given identification number 1-30-045 and is considered a class 2 site, that is, a site where additional work or information is necessary.

2.0 BACKGROUND

2.1 Site Location

The Unisys Defense Systems, Inc. Shipboard and Ground Systems Facility is located on Long Island, New York along the western edge of Nassau County. The facility straddles the border between the Town of North Hempstead and the Incorporated Village of Lake Success. The facility is bounded on the north by Marcus Avenue, on the west by Lakeville Road, on the south by Union Turnpike, and to the east by the Triad Office Park (Figure 1). The facility can be accessed by car on either the Northern State Parkway or the Long Island Expressway by utilizing the Lakeville Road exit off of either roadway. The mailing address of the facility is 365 Lakeville Road, Great Neck, New York 11020-1696. Please note that the facility is not located in Great Neck but is serviced by the United States Postal Service Great Neck Branch Office, hence, the Great Neck mailing address.

2.2 Past Owners and/or Operators

The facility was originally designed and built in 1941 by the United States Government under the auspices of the federally owned Defense Plant Corporation. The federally designed plant was operated under contract to the federal government by the Sperry Gyroscope Company, a division of Sperry Rand Company, from 1941 until 1951 when the government sold the property to Sperry. Sperry retained ownership of the facility until the 1986 merger with Burroughs Corporation at which time the ownership name became Unisys Corporation. In 1991 Unisys Defense Systems, Inc. a wholly owned subsidiary of Unisys Corporation, was formed which now includes defense facilities such as the Shipboard and Ground Systems Facility.

2.3 Site Description

2.3.1 Grounds

The facility presently encompasses 98 acres of land. The property, in general, slopes to the south (Figure 2). This slope is similar to that encountered in the area. The majority of the property is either under roof (approximately 1,500,000 square feet), or utilized for paved parking. Some grassy areas exist along the north , south, and west

sides of the plant as well as around the retention/recharge basins. Soils at the site, which are well draining, are generally sandy with cobbles. These surficial soils are glacial in origin and are associated with the terminal moraine which lies within one mile to the north of the facility. The land where the facility now stands was previously used for farming. Originally, the facility grounds extended to the intersection of Marcus Avenue, Union Turnpike, and New Hyde Park Road. This additional land, approximately 48 acres, was sold to Triad Corporation in 1972 for development of the Triad Office Park.

2.3.2 Buildings

The largest building on site is the main manufacturing building. This building is of approximately 1,000,000 square feet in size. Attached to this building on the north side is the administration building. The administration building is of brick and steel construction and is three stories tall. The brick and steel main manufacturing building is two stories in height with wooden block flooring. In some areas the wooden block flooring has been replaced with cement. An additional manufacturing building stood on the site of the 48 acres which were sold in 1972. This building, which was approximately two thirds the size of the main manufacturing building was razed prior to the sale of the 48 acres but can be seen on a 1950 aerial photograph. To the east of the additional manufacturing building was an open area for antenna testing. This area was reportedly somewhat lower lying than its surroundings and runoff ponded in this area.

South of the main manufacturing building, and on the western portion of the property stands the former Foundry Building. This building, of similar construction as the main building, was idled as a foundry in 1960. To the east of the former foundry is the Boiler Building, and further to the east is the Garage Building. Several small out buildings exist which are used for equipment storage, maintenance, guard booths and pump houses.

The buildings are heated using a boiler system. The boiler system is fueled by natural gas. # 6 fuel oil is stored on site as a backup supply of fuel as the natural gas supply is an interruptible source. Cooling comes from the use of ground water and chillers.

2.3.3 Cooling Water Wells

The facility is cooled by chillers which utilize ground water for cooling. The ground water is pumped from three wells located in the northern half of the property. These wells are known as Unisys Well 1, 2 and 3. The State of New York unique well numbers are N-1818, N-4173, and N-1804, respectively. The well construction logs are attached as Appendix A. A fourth cooling water well, Unisys 4 (N-1858), was located on land sold for the Triad Office Park. This well has been abandoned.

2.3.4 Diffusion Wells

Once the cooling water passes through the facility, the water is directed to four diffusion wells for return to the aquifer. These wells are known as Unisys Diffusion well 5, 6, 7, and 8. The State of New York well numbers are N-1835-D, N-1841-D, N-4207-D, and N-1819-D. The well construction logs are attached as Appendix B. A fifth diffusion well, Unisys Diffusion well 9 (N-3776-D) was located on land sold for the Triad Office Park. This well has been abandoned.

2.3.5 Retention/Recharge Basins

Three retention/recharge basins were formed as part of the construction of the facility. The basins, with a total surface area of 2.4 acres, receive runoff from building roof drains and from the parking lots. The water is allowed to recharge into the aquifer, evaporate, or is pumped into an irrigation system for maintaining grassy areas.

2.3.6 Sewers

Sanitary and permitted industrial wastes are removed from the site through sewer service lines. These lines are located on the north and south sides of the main manufacturing building. The line on the south side also extends northward along the west side of the building joining with the northside line outside of what is known as the Honey House. The Honey House, located outside the northwest corner of the main manufacturing building, once acted as a sewage lift station. The use of the Honey House was abandoned when Nassau County replaced the pressure main with a gravity main. The combined sewer service extends from the Honey House to the west to intersect the sewer main.

2.3.7 Aerial Photographs

Several aerial photographs have been obtained for background information. These photos, which have been copied and included as Appendix C, are from the years 1950, 1976, 1980, and 1990.

Photos can be obtained from AeroGraphics Corporation of Bohemia, New York for the years of 1976, 1980, 1985, 1990, and 1991. Photos for the years of 1950, 1955, 1957, 1962, 1969, 1972, 1978, 1984, and 1988 can be obtained from Lockwood, Kessler & Bartlett of Syosset, New York.

3.0 MANUFACTURING

3.1 Past Processes

3.1.1 Foundry

All foundry operations took place in the Foundry Building located south of the main manufacturing building. Magnesium, brass, copper, and aluminum were all used in the foundry. All wastes from the foundry were taken to the reclamation area for disposal, however no records are available regarding quantities of waste disposed. Foundry operations were discontinued in 1960.

3.1.2 Plating

Plating operations continued at the site until the early 1970's however the plating tanks were not removed from the facility until 1978. Liquid wastes from the plating operations were collected and sent to the reclamation area for removal from the plant. Plating tank sludges were handled in a similar fashion. The plating area was approximately 10,000 square feet in size and plated a variety of metals including gold, silver, and copper.

3.1.3 Environmental Test Laboratory

The environmental test laboratory was located in the foundry building. The waste stream from this area included a wide variety of chemicals as many different bench scale processes took place in the laboratory as well as prototype production of circuit boards. The test laboratory was closed in 1991.

3.1.4 Extension Building

The extension building was built in the mid 1940's to the east of the main manufacturing building and was approximately two thirds the size of the main building. The major use of the extension building was machining, however, it also housed a print shop, the tube lab (glass blowing), degreasing, and a separate cafeteria. This building was razed in the early 1970's with most of the land sold to the Triad Corporation for development of The Triad Office Park. All waste streams from the extension building were sent to the reclamation area for removal from the site.

3.2 Present Processes

3.2.1 Machining

Machining operations take place in the central portion of the main manufacturing building occupying approximately 12,000 square feet. The machining operations include drilling, boring, lathes, cutting, grinding and fabrication. These operations use cutting oils to facilitate metal working. The oils are water soluble. All oils are collected at the point of use in reservoirs beneath each piece of equipment. Disposal of the water soluble oil is performed by plant personnel by periodically pumping the reservoirs to 55 gallon drums for disposal by a licensed waste disposal company.

The machining operations once took up most of the main manufacturing building (reportedly over 75% of the floor space). Considerable reductions in machining have taken place until it has reached its present size.

3.2.2 Degreasing

Degreasing operations are located in three areas of the plant, all within the main manufacturing building. The three areas where the degreasing tanks are located occupy less than 100 square feet. The tanks are vented with the venting properly permitted. The largest tank is of 250 gallon capacity with the other tanks of approximately 100 gallon capacity. 1,1,1-trichloroethane is used for the degreasing process. The 1,1,1-trichloroethane is obtained and stored in 55 gallon drums. Waste 1,1,1-trichloroethane is pumped periodically from the degreasing tanks and collected in 55 gallon drums. These drums are removed from the site by a licensed waste disposal company.

There are also several spray boxes located in various areas of the main manufacturing building. These vented spray boxes are used on parts which are too small to be dipped in the degreasing tanks. No solvent wastes are collected from these spray boxes as all solvents used are evaporated by the vents.

Degreasing operations were larger in the past but have been reduced as the manufacturing aspect of the facility has waned.

3.2.3 Soldering

Soldering is performed in three areas of the plant. Soldering benches, which occupy less than 100 square feet of space, are enclosed areas where temperature and humidity are controlled. The waste solder, paste, and fluxes (which can contain silver and lead) are collected at the soldering benches and removed from the plant by a licensed waste disposal company.

3.2.4 Acid Baths

Acid baths are located in the north central portion of the main manufacturing building. The acid bath room occupies 900 square feet of space. The acid bath room is known to plant personnel as the plating room although no true plating occurs in this room nor does plating occur elsewhere at the site. The acid baths are used to prepare materials for painting and welding, and for applying corrosion resistant coatings to aluminum. This area uses caustic soda and the detergent ridolene (Tm) for cleaning. These materials are disposed of by pumping to a lime pit (tank) located outside of the room and then to the sanitary sewer. Waste acids are pumped to 55 gallon drums for disposal by a licensed waste disposal firm. Disposal of acids is infrequent as it may take several years before acid bath liquids require disposal.

3.2.5 Painting

The painting room is adjacent to the acid bath room and occupies 2400 square feet. Two vented paint booths are operated in this room. The solvent used in painting is 1,1,1-trichloroethane. Acetone is also used in this area. As with the degreasing process, the solvent is obtained and stored in 55 gallon drums. Waste solvent is collected in 55 gallon drums and removed from the plant by a licensed waste disposal company. Paint sludges are removed in a similar fashion.

3.2.6 Boiler Operations

Boilers at the facility remain in constant operation. Chemicals are used in this operation to condition water for optimum boiler use. Chemicals used include corrosion and scaling inhibitors as well as compounds to control pH. The boilers have a continuous blowdown to remove particulates. The blowdown water is sent to the sanitary sewer system for removal. The blowdown water does contain the conditioning chemicals.

3.2.7 Printing and Photography

Printing and photographic operations take place at the facility. Chemicals normally associated with blueprinting, such as ammonia, are used as well as photo development chemicals. Wastes from these operations are removed from the site by licensed waste disposal company.

3.2.8 Beryllium Grinding

A glove box is used for the grinding of parts made of beryllium. The use of this glove box is infrequent. Shavings are removed by qualified personnel from a licensed waste disposal company when necessary.

3.2.9 Fleet Maintenance

Fleet vehicles are serviced in the Garage Building. Wastes such as hydraulic, transmission, and engine oils are collected as they are replaced and removed from the site.

4.0 CHEMICAL USAGE

The processes described in Section 3.0 use a variety of chemicals. Appendix D presents the most recent listing of chemicals used by the Shipboard and Ground Systems Facility. Please note that this listing is for chemicals used during 1991 and do not necessarily reflect chemicals used in the past. Additional efforts will be made to determine past chemical usage.

5.0 CHEMICAL STORAGE AND DISPOSAL

5.1 Chemical Storage Room

Chemicals are stored in a secure chemical storage room also known to site personnel as the Oil Room. All appropriate procedures are followed regarding the safe storage of chemicals and the proper labeling and storage of spent materials prior to disposal. The Chemical Storage Room is located in the southeast corner of the main manufacturing building and is considered part of the reclamation area.

5.2 Reclamation Room

Prior to the use of the Chemical Storage Room, all wastes were taken to the Reclamation Room. This room is located in the southeast corner of the main manufacturing building and includes the concrete apron outside the building in this area. The liquid wastes were stored in 55 gallon drums prior to collection by a waste disposal firm. Oils and solvents that were mixed with water were sent through a centrifuge to separate the water. The water was allowed to drain to dry wells located outside the reclamation area while the spent solvents were piped to underground storage tanks. Some liquid wastes were also allowed to remain in 55 gallon drums until the waste hauler vacuumed the wastes from the drums.

Scrap metal shavings from the machining operations were taken to what was known as the chip extraction room (a part of reclamation). The various metals were segregated and sold to scrap dealers. Some water soluble cutting oil which remained on the shavings was allowed to drain through floor drains to the dry wells. Larger pieces of scrap metal were also segregated and sold to dealers. Bids for metal removal are typically let for one year periods.

Paper wastes were handled in a fashion similar to scrap metal, that is, collected and sent to the reclamation area to await pickup from a paper recycler. James DeMarco & Sons, Inc. of Brooklyn was often used for the removal of paper.

Wastes that were not segregated were placed in dumpsters to await removal. Jamaica Ash Company is presently used for this purpose.

All hazardous wastes are now handling according to government regulations and removed from the site by Advanced Environmental Technology Corporation of Flanders, New Jersey or Safety Kleen Corporation of Linden, New Jersey. It is Unisys corporate policy to use waste disposal firms that either recycle or incinerate wastes, not to landfill wastes.

An internal log has been kept of incidents at which an employee trained in hazardous waste handling has been present. This log is attached as Appendix E1. It should be noted that there are no records of reportable quantities spilled at the facility. Appendix E2 is a compilation of the waste manifests for the facility for 1991.

5.3 Volatile Liquid Piping

Figure 3 presents facility drawing VP 6520 which depicts volatile liquid piping. This piping once transferred solvents from storage to the interior of the plant and removed spent solvents from the plant to underground storage. The figure also depicts floor drains which at one time lead from the reclamation area to dry wells located outside the reclamation room. The configuration of the dry wells is also depicted on the figure.

5.4 Dry Wells

The dry wells which are mentioned in sections 5.2 and 5.3 are the sources for volatile organic compounds detected in ground water at the site and in soils in the vicinity of the reclamation area. The use of the dry wells ceased in the late 1970's. The wells were later filled with sand and the piping to the wells was abandoned by sealing the floor drains leading to the dry wells. The abandonment of the piping occurred in the early 1980's. No other dry wells for disposal of liquid wastes existed at the facility although french drains exist for infiltration of runoff from drains whose invert elevations prevent them from being tied into the storm sewers.

Waste disposal practices regarding the use of the dry wells were initially investigated by the Nassau County Department of Health. There findings inferred that the dry wells, also called cesspools by the county, were potential source areas for the introduction of solvents to the ground water. Correspondence between the facility and the county is included as Appendix E3.

5.5 Underground Storage Tanks

All underground storage tanks have either been removed or replaced at the site. Figure 4 depicts tank locations.

5.5.1 Gasoline Tank

A ten thousand (10,000) gallon steel underground gasoline storage tank was located immediately south of the garage building. The gasoline was used for fleet vehicles. The tank, which was installed in 1975, replaced a 1,300 gallon tank which was installed when the plant was constructed. The 1,300 gallon tank was replaced during the 1975 oil shortage so that the facility could assure itself of an adequate supply of gasoline. The 10,000 gallon tank was removed in 1990 instead of upgrading or replacing the tank to meet regulations regarding underground storage of gasoline. NYSDEC personnel were on site to witness the tank removal. Approximately 20 yards of soil was removed with the tank. The soil was thought to have come in contact with gasoline due to spillage during filling events as the tank itself had no visible signs of leakage. Fleet vehicles now use an independent off site source for fuel. Limited amounts of gasoline is stored on site in approved containers for small equipment such as mowers.

5.5.2 # 6 Fuel Oil

Eight steel underground storage tanks were located immediately to the east of the Boiler Building for the storage of # 6 fuel oil. The # 6 fuel oil was used as a backup fuel supply for the boilers. Four of the eight tanks were of 25,000 gallon capacity with the remaining tanks of 15,000 gallon capacity. The 15,000 gallon tanks were installed at the time of plant construction. The 25,000 gallon tanks were installed in the 1950's. All eight tanks were removed in 1991. NYSDEC personnel were on site to observe the tank removals. Approximately 175 yards of soil was removed with the tanks. The soil was thought to have come in contact with the # 6 fuel oil due to spillage during filling events. Evidence of spilling was evident along the tank sides once the tanks were exposed. The tanks had no

visible signs of leakage. These tanks were replaced with two (2) 20,000 gallon capacity double wall fiberglass tanks.

5.5.3 Solvent

Six (6) 2,000 gallon underground tanks were used for the storage of fresh and spent solvents. These tanks were located outside the reclamation room. The tanks were removed in the early 1980's. The tanks were not replaced as liquid chemical storage was changed to 55 gallon drums. These tanks are depicted in Figure 3. The figure does indicate room for additional tanks, however, only six tanks were installed.

5.5.4 Foundry Fuel Oil

Three (3) five thousand (5,000) gallon underground # 2 fuel oil storage tanks were located immediately south of the former Foundry Building. These tanks were used for foundry operations. These tanks, which were installed at the time of plant construction were removed in the early 1980's, although the tanks were not in use since the foundry operation were terminated in 1960.

5.6 Above Ground Tank

A six thousand (6,000) gallon above ground tank was located outside of the east wall of the main manufacturing building. This tank stored ethylene glycol for machinery and cooling purposes. The tank was removed in 1981.

6.0 PLANT PERMITS

Various permits have been obtained and/or fees disbursed for the following items:

1. Air emissions - NYSDEC; Nassau County Department of Health
2. Hazardous waste generation - NYSDEC
3. Industrial sewer discharges - Nassau County Department of Public Works
4. Underground flammables storage - Town of North Hempstead
5. Toxic or hazardous materials storage - Nassau County Department of Health
6. Radioactive materials - New York State Department of Labor Division of Safety and Health

These permits have been included as Appendix F.

The Shipboard and Ground Systems Facility is considered a hazardous waste generator. The facility has been issued generator number NYD075796037 by the United States Environmental Protection Agency.

7.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

7.1 Geraghty & Miller (1988)

Geraghty & Miller, Inc. (G&M), of Plainview, New York, was retained to provide project management and hydrogeologic consulting services at the Shipboard and Ground Systems Facility. Unisys Corporation undertook this task to facilitate the determination of potential environmental concerns at all facilities which were part of the Sperry and Burroughs Corporations merger. The results of this work, which included soil borings, soil chemical analyses, monitoring well construction, and ground water chemical analyses, were reported to NYSDEC in the October 15, 1990 report from Unisys titled Site Assessment for the Unisys Manufacturing Facility Site, Great Neck, New York.

7.1.1 Soil Borings

From January through April 1988 G&M supervised the drilling of fourteen (14) hollow stem auger soil borings at the Shipboard and Ground Systems Facility. The soil borings were advanced by Environmental Drilling Inc. (EDI) of West Creek, New Jersey. Drilling locations are presented in Figure 1. Boring logs are presented in Appendix G1. Drilling locations were chosen in the areas deemed most likely to exhibit environmental problems if a problem did indeed exist.

7.1.2 Soil Chemistry

Soils samples were retained from the soil borings for chemical analysis. Copies of the laboratory reports, prepared by EcoTest of Babylon, New York are presented in Appendix G2.

7.1.3 Well Construction

Following the completion of the soil boring activity, five (5) monitoring wells were constructed to obtain representative ground water samples beneath the site. These wells were numbered GM1, 1s, 2, 3, and 4. These wells were completed during the month of May 1988. The wells were drilled by EDI with G&M providing drilling oversight. Well construction logs are presented in Appendix G3. The well locations (Figure 5) were chosen so that ground water quality and ground water elevations could be determined at the property line of the facility.

7.1.4 Ground Water Chemistry

Representative ground water samples were obtained from the five monitoring wells in July and August, 1988 and delivered to YWC for analyses. The samples were analyzed for concentrations of petroleum hydrocarbons, volatile organic compounds, and metals. The laboratory reports are presented in Appendix G4.

7.1.5 Sediment Chemistry

At the time of ground water sampling, sediment samples were taken from the retention/recharge basins for chemical analyses. The laboratory report is presented in Appendix G4.

7.2 Geraghty & Miller (1989)

The work completed by G&M in 1988 indicated that ground water had been impacted by chlorinated solvents. This impact was noted in all ground water samples but was greatest in samples from the reclamation area and along the northern property line. Ground water elevations indicated that ground water flow appeared to be from the southeast to the northwest. Soils from the reclamation area exhibited some evidence of volatile organic compounds however other soil samples did not appear to be impacted. Following a review of this data, Unisys requested that G&M gather additional information concerning ground water quality.

7.2.1 Monitoring Well Construction

From March through May 1989 G&M oversaw the construction of fourteen (14) additional monitoring wells. The well locations are presented on Figure 5. The additional wells gave greater horizontal coverage to the monitoring well network and allowed for a determination of constituent concentrations in the vertical plane as several of the well locations were completed as well nests (adjacent wells completed at differing depths). The well construction logs are presented as Appendix H1.

Later work at the site by others includes well construction. At the time of additional well construction a new numbering system for the monitoring wells was instituted. There are two aquifers under study at the site. The Magothy (M) and the Glacial (G) Aquifers. Wells are completed at Upper (U), Intermediate (I), and Lower (L) depths within each aquifer. For this project the GU designation represents wells completed approximately 100 - 140 feet below grade. GL wells are completed 141 - 180 feet below grade. MU wells are completed 181 - 230 feet below grade. MI wells are completed 231 - 325. ML wells are completed 375 - 400 feet below grade. The numbering system is explained as follows: the new system incorporates a numeral which indicates the well or well nest location, followed by two letters which indicates the presumed aquifer in which the particular well is completed and the relative depth within the aquifer. For example, the well numbered 12MI is the well located in the #12 well nest, completed in the M, for Magothy, aquifer, at an I, or intermediate depth, within the aquifer.

The following is a list of the old G&M wells with their corresponding new well designation:

G&M Name	New Designation
GM1	1GL
GM1S	1GU
GM1M	1MI
GM1MD	1MI/L
GM2	2GL
GM2M	2MI
GM3	3GL
GM4	4GL
GM4M	4MI
GM5	5GL
GM5M	5MI
GM6	6GL
GM7	7GL
GM8	8GL
GM8S	8GU
GM9	9GL
GM10	10GL
GM11	11GL
GM11M	11MI

7.2.2 Ground Water Chemistry

The monitoring wells were sampled in June 1989 so that a site wide comparison of ground water quality could be made. The laboratory report is attached as Appendix H2. Ground water samples were split with Nassau County, the Nassau County chemistry results are included for comparison. The results indicated the presence of dissolved chlorinated solvents in the ground water. Table 1 presents a summary of all volatile organic analyses results by well for comparison purposes.

7.2.3. Geophysical Logs

Geophysical logging was performed on selected wells following the 1989 drilling. The wells chosen for geophysical logging were GM-1MD (1MI/L), GM-2M (2MI), GM-4M (4MI), GM-5M (5MI), GM-6 (6GL), GM-7 (7GL), GM-8 (8GL), GM-9 (9GL), GM-10 (10GL), and GM-11M (11MI). The old G&M name is given first, the new designation is given in parentheses. These wells were chosen for logging as they were the deepest borehole at each location at that time. The logs are presented in Appendix H3.

7.3 Tracer Soil Gas Survey

As a confirmation of the findings from soil analyses in the reclamation area and to determine if the dry well area was a possible source of the volatiles detected in ground water, Tracer Research Corporation was retained to perform a soil gas survey in the vicinity of the reclamation area. The results indicated that soils in the reclamation area had been impacted by chlorinated solvents. The Tracer report is included as Appendix I. This report includes a description of the equipment used, procedures, field notes, sampling points, and analytical data.

7.4 Roux Associates

In 1990 Roux Associates of Huntington, New York were retained to provide additional hydrogeological consulting services, specifically aquifer performance testing and analysis. To support the aquifer performance testing, three additional monitoring wells were installed under the supervision of qualified Unisys personnel. As a separate phase of work soil borings were completed outside the reclamation area to determine soil quality and to confirm the Tracer results. These borings were also supervised by Unisys. Following the aquifer performance test, YWC sampled monitoring wells at the site for chemical analyses.

7.4.1 Soil Borings

Nine soil borings numbered SVB 1 through 9 were advanced in the vicinity of the dry wells outside of the reclamation room in June 1990. Drilling was completed by R&L Drilling of Islip, New York during the month of June 1990. The drilling locations are presented on Figure 6. Soil boring logs, which also present photoionization detector readings of recovered soil samples, are presented in Appendix J1. A draft report on this work was presented to NYSDEC in 1991. The draft report was titled Reclamation Area Soil Assessment, Unisys Corporation, Shipboard and Ground Systems Group, Great Neck, New York.

The vent wells were installed as relatively high concentrations of volatile organic compounds were detected by field screening recovered soil samples. Well construction logs are presented in Appendix J2.

7.4.2 Soil Chemistry

Chemical analyses of select soil samples recovered during soil boring were performed by YWC. The laboratory reports are presented in Appendix J3.

7.4.3 Soil Vent Wells

Several of the soil borings were completed as soil vent wells. The vent wells are numbered VW 1 through 6. Please note that the soil vent borings and vent wells are numbered consecutively and that these numbers are not necessarily alike. Both the soil vent boring number and the vent well number are given on the logs. Vent well locations are presented on Figure 6.

7.4.4 Monitoring Well Construction

To provide additional monitoring points during the aquifer performance testing, three (3) monitoring wells were constructed. These wells 1ML, 12MI, and 12ML, are depicted on Figure 7. Well construction was completed by EDI during the months of June and July. Well construction logs are presented in Appendix J4.

7.4.5 Ground Water Chemistry

YWC sampled the monitoring wells at the site in July and August 1990. These samples were analyzed for volatile organic compounds. The laboratory report by YWC is presented in Appendix J5. In October 1990 water samples were collected from Unisys cooling water well #2. The chemistry reports corresponding to this sampling are also presented in Appendix J5.

7.4.6 Permeability and Sieve Analyses

Three soil samples were chosen from those recovered during soil boring and subjected to sieve analysis. This information was to be used in determining the feasibility of soil venting. During monitoring well drilling, a thin wall sample of the Raritan Clay was obtained from 12ML. A permeability test was completed on this sample to aid in the understanding of aquifer characteristics. These test results are presented in Appendix J6.

7.4.7 Aquifer Testing

Roux Associates performed an aquifer performance test utilizing Unisys cooling water well 2 as the pumping well. A report regarding the test and its analysis is presented as Appendix K. Quantitative results from the test are not particularly useful although the qualitative results are very helpful in understanding the hydrogeology of the site and of sizing extraction/treatment equipment for interim remedial measures.

7.5 LBG Work

In 1991 Leggette, Brashears & Graham, of Wilton, Connecticut, was retained to supervise the drilling of additional soil borings in the reclamation area, the construction of additional vent wells, observe well redevelopment, sample the monitoring wells, obtain ground water level measurements, and to review ground water chemistry and water level data.

7.5.1 Soil Borings

Soil borings SVB 10 through SVB 18 were advanced in the area of the reclamation room. These borings were advanced to provide additional soil chemistry in the reclamation area to determine in a preliminary fashion a zero line for organic compounds in soils in the reclamation area. Soil boring logs are presented in Appendix L1. Boring locations are presented on Figure 7.

7.5.2 Soil Chemistry

Soil samples obtained from the 20, 40, 60, and 80 foot depths from each soil vent boring were submitted to the laboratory for analysis. These samples were analyzed for the concentration of volatile organic compounds. At the boring advanced nearest the dry wells (SVB-17) additional soil samples were obtained for analysis. Individual samples were composited from the 10 and 20 foot depths, the 30 and 40 foot depths, the 50 and 60 foot depths, and the 70 and 80 foot depths. These four (4) composite samples were analyzed for semi-volatile compounds, polychlorinated biphenols and pesticides, and for metals. The laboratory reports prepared by IEA of Monroe, Connecticut, are [redacted]EA is the same laboratory as YWC except under new ownership).

7.5.3 Vent Well Construction

Several of the soil vent borings were completed as vent wells. These additional vent wells are numbered VW 7 through 14. As stated in section 6.4.2, the vent well and soil vent boring numbering is not necessarily alike. Both numbers are presented on the logs. [redacted] Vent well locations are presented on Figure 7.

7.5.4 Well Redevelopment

It was noted during the YWC sampling in 1989 that many of the yields of several of the monitoring wells was low. In an attempt to increase yields all monitoring wells were redeveloped prior to sampling. The screened portion of each monitoring well was jetted using potable water. Following jetting, each well was pumped taking care to pump out at least as much water as was used during jetting. Results of the redevelopment were not uniform although subsequent sampling did indicate a general increase in monitoring well yields.

7.5.5 Well Construction

Two monitoring wells, 2MU and 6MI were installed as additional monitoring points for proposed aquifer testing. In addition to these wells, two recovery wells RW1 and RW2 were installed for future data collection regarding ground water withdrawals and treatment. The well locations are presented on Figure 7. The lithologic and well construction logs for each of these wells is presented in Appendix L4.

7.5.6 Ground Water Chemistry

In September 1991 LBG sampled the existing monitoring wells and those vent wells which intercepted the water table. The samples were analyzed for volatile organic compound concentrations by IEA. Copies of the IEA reports are included as Appendix L5.

8.0 SUMMARY of CHEMISTRY DATA PER WELL

A comparison of volatile organic concentration by well has been assembled. This comparison is included as Table 1. The comparison includes all volatile data per well since the 1988 sampling.

9.0 GROUND WATER ELEVATIONS

Ground water elevations have been obtained from existing monitoring well since 1989. These elevations are presented as Table 2. Three representative dates have been chosen and ground water flow diagrams were prepared for these dates. The dates are June 8, 1989, August 16, 1990, and June 25, 1991. The flow diagrams for each day are separated for wells which are approximately 150 foot deep and for wells which are approximately 250 foot deep. These flow diagrams are presented as Figures 8 through 13.

10.0 OFF SITE WATER SUPPLY and LARGE INDUSTRIAL WELLS

As part of the G&M work, the location of off-site water wells was investigated. The locations of off site water supply wells and large (greater than 45 gpm) industrial wells were located within a three mile radius of the site. These locations are presented with the Roux aquifer test report (Appendix K).

11.0 SUMMARY

The Shipboard and Ground Systems Facility in Great Neck, New York appears to have been impacted principally by volatile organic compounds which have been detected in samples from on site monitoring wells and in soil samples from the reclamation area. These compounds were disposed at the site through the use of dry wells (cesspools). Use of the dry wells, located in the reclamation area, was discontinued in the late 1970's. Since the late 1970's liquid waste material, other than permitted sanitary and industrial discharges, has been removed from the site for disposal.

Tables

TABLE 1

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

Ground-Water Chemistry
(All results are in micrograms per lit[redacted]

Well	Date	1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	Acetone	Toluene	Methylene Chloride	Additional compounds detected (concentration)
1GU	08/17/88	3,400	210	160	NA	<5	<5	10/31/91
	07/11/89	4,400	210	170	<10	<5	<5	1,1,1 Trichloroethane (5)
	09/10/90	190	23	19	26 B	<5	3 JB	
	10/31/91	21	4 J	<5	<10	<5	<5	
1GL	08/17/88	5,100	610	590	NA	47 J	210 B	
	07/11/89	2,200	150	180	<10	<5	<5	
	09/10/90	[redacted]	490	660	730 B	<5	84 J	
	10/31/91	84	23	19	<10	<5	<5	
1MI	07/11/89	680	190	96	<10	<5	<5	
	09/10/90	700	120	94	24 J	3 J	11 J	
	10/31/91	[redacted]	260	370	590 B	<5	<5	
1MI/L	07/18/89	710	240	57	63 B	<5	9 JB	
	09/10/90	510	370	84	19 JB	<5	<5	
	10/31/91	160	190	37	<10	<5	<5	
1ML	09/10/90	<5	17	11	<10	0.6 J	<5	
	10/31/91	19	10	17	<10	3 J	<5	
2GL	08/17/88	620	91	83	NA	27	<5	
	07/11/89	1,000	170	120	<10	<5	<5	
	09/10/90	1,200	230	160	210	<5	31 JB	
	10/31/91	980	170	110	250 B	<5	<5	
2MI	07/11/89	89	70	19	<10	<5	<5	9/10/90
	09/10/90	120	56	34	<10	1 J	2 J	1,1,1 Trichloroethane
	10/22/91	670	180	100	78 B	<5	13 JB	(1 J)
2MU	10/22/91	670	170	120	65 B	2 J	5 J	Chloroform (7 J)
3GL	08/17/88	830	180	120	NA	9 J	36 B	
	07/11/89	1,400	170	140	<10	<5	<5	
	09/10/90	1,900	280	270	140	6 JB	28 JB	
	10/31/91	820	180	110	31 JB	<5	<5	
4GL	08/17/88	120	56	21	NA	10	<5	
	07/11/89	99	56	20	<10	<5	<5	
	09/10/90	210	71	34	21 B	<5	13 B	
	10/31/91	320	91	58	6 JB	<5	<5	

TABLE 1
(continued)

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

Ground-Water Chemistry
(All results are in micrograms per liter (ug/l))

Well	Date	1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	Acetone	Toluene	Methylene Chloride	Additional compounds detected (concentration)
VW13	10/22/91	18,000	220 J	770 J	3,700	5,500	<5	Xylenes (2,000) Ethylbenzene (480 J)
[redacted]	10/22/91	<5	[redacted]	54,000	16,000 B	19,000	1,100 J	Xylenes (4,100) Ethylbenzene (850 J) 1,1,1 Trichloroethane (750 J)

B - Method blank was contaminated.
J - Parameter was determined to be present below the method detection limit. The concentration is an estimated value.
NA - Not analyzed.
10/5 - Method detection limits with no dilution.

unisys.tbl/91-50

TABLE 1
(continued)

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

[redacted]

Well	Date	1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	Acetone	Toluene	Methylene Chloride	Additional compounds detected (concentration)
11GL-119	07/11/89	260	57	57	<10	<5	<5	
	09/10/90	1,800	170	520	<10	<5	<5	
	10/31/91	2,300	210	510	550 B	84 J	<5	
11MI	07/11/89	660	150	78	<10	<5	<5	
	09/10/90	810	170	100	17 JB	<5	16 JB	
	10/31/91	490	120	110	110 B	4 J	<5	
12MI	07/11/89	82	49	31	<10	<5	<5	9/10/90
	09/10/90	170	54	44	<10	2 J	8	Benzene (1 J)
	10/22/91	320	75	73	6 JB	<5	<5	1,1,1 Trichloroethane (2 J)
12ML	09/10/90	51	5	11	<10	0.6 J	24	
	10/22/91	41	5	12	6 JB	<5	<5	
[redacted]	10/31/91	[redacted]	<5	[redacted]	<10	[redacted]	<5	[redacted] Ethylbenzene (1,000 J)
VW2	10/31/91	3,000 J	[redacted]	21,000	5,600 JB	18,000	<5	Xylenes (2,300 J)
VW3	10/31/91	2,100	130	310	130 JB	<5	<5	
VW4	10/31/91	[redacted]	<5	<5	9,100	3,300	<5	
VW5	10/31/91	48,000	<5	<5	1,100 J	8,700	<5	
VW6	10/31/91	44	32	21	4 JB	<5	<5	
VW7	10/31/91	DRY	--	--	--	--	--	
VW8	10/22/91	17,000	390 J	830	1,400 B	<5	120 JB	
VW9	10/22/91	2,100	260	430	380 B	13 J	<5	
VW10	10/22/91	30	64	60	5 JB	<5	<5	
VW11	10/31/91	67	39	30	2 JB	<5	<5	
VW12	10/31/91	1,200	200	320	20 JB	<5	<5	

TABLE 1
(continued)

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

Ground-Water Chemistry
(All results are in micrograms per liter (ug/l))

Well	Date	1,2-Dichloroethene	Trichloroethene	Tetrachloroethene	Acetone	Toluene	Methylene Chloride	Additional compounds detected (concentration)
4MI	07/11/89	780	180	100	<10	<5	<5	
	09/10/90	820	210	190	60 JB	<5	16 JB	
	10/31/91	440	31	<5	15 JB	<5	<5	
5GL	07/11/89	<5	<5	<5	<10	<5	<5	
	09/10/90	30	9 J	5 J	9 JB	<5	8 JB	
	10/22/91	23	7	4 J	1 JB	<5	<5	
5M[redacted]	07/11/89	110	59	22	<10	97	<5	7/11/89
	09/10/90	69	17	9	5 JB	2 J	<5	Benzene (8)
	10/22/91	300	89	49	11 JB	2 J	<5	Xylenes (72)
								Ethylbenzene (26)
6GL	07/11/89	<5	<5	<5	<10	<5	<5	
	10/22/91	15	3 J	2 J	6 JB	<5	<5	
6MI	10/22/91	600	100	110	67 B	<5	5 J	
7GL	07/11/89	140	66	23	<10	<5	<5	
	09/10/90	220	93	43	26 B	<5	4 JB	
	10/22/91	230	63	32	13 JB	2 J	<5	
8GU	07/11/89	55	26	15	<10	<5	<5	9/10/90, 10/22/91
	09/10/90	72 J	46	37	<10	<5	<5	1,1,1 Trichloroethane
	10/22/91	50	39	29	<10	<5	<5	(4 J) (3 J)
8GL	07/11/89	910	250	160	<10	<5	<5	
	09/10/90	270	150	75	<10	<5	4 JB	
	10/22/91	350	140	94	22 B	<5	<5	
9GL	07/11/89	85	46	29	<10	0.6 JB	<5	7/11/89, 9/10/90
	09/10/90	100	46	38	6 JB	0.7 J	6	1,1,1 Trichloroethane
	10/31/91	82	51	36	12 B	<5	<5	(2 J) (1 J)
10GL	07/11/89	86	42	220	<10	<5	<5	9/10/90, 10/22/91
	09/10/90	85	49	41	<10	<5	<5	1,1,1 Trichloroethane
	10/22/91	110	44	210	14 JB	<5	2 J	(3 J) (2 J)

TABLE 2
(continued)

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

Ground-Water Elevations

Well designation	Elevation of measuring point (feet above mean sea level)	Water-Level Elevations (feet above mean sea level)	
		8/16/91	9/17/91
VW1	129.70	47.25	--
VW2	128.33	90.51	92.28
VW3	128.50	45.68	47.95
VW4	128.36	45.81	47.68
VW5	128.62	45.52	47.79
VW6	128.57	46.07	47.94
VW7	128.55	Dry	Dry
VW8	128.85	45.80	47.14
VW9	128.69	45.92	47.49
VW10	128.88	48.18	48.04
VW11	125.99	46.15	47.99
VW12	127.14	44.77	47.86
VW13	128.80	--	47.85
VW14	128.65	--	94.06

unisys.tbl/91-50

TABLE 2
(continued)

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

Ground-Water Elevations

Well designation	Elevation of measuring point (feet above mean sea level)	Water-Level Elevation(feet above mean sea level)									
		06/08/89	01/10/90	08/16/90	05/21/91	05/29/91	06/25/91	07/30/91	08/16/91	09/17/91	11/14/91
11MI	129.39	40.34	44.25	44.72	45.98	47.62	46.44	46.35	44.59	45.87	46.64
12MI	133.61	--	--	--	42.17	42.53	45.27	44.86	38.61	30.39	41.66
12ML	133.85	--	--	--	44.67	44.30	44.68	42.13	41.25	43.35	44.80

Well Depths

GU - Glacial Upper, 90-115 ft.
GL - Glacial Lower, 125-155 ft.
MI - Magothy Intermediate, 250 ft.
ML - Magothy Lower, 385-395 ft.

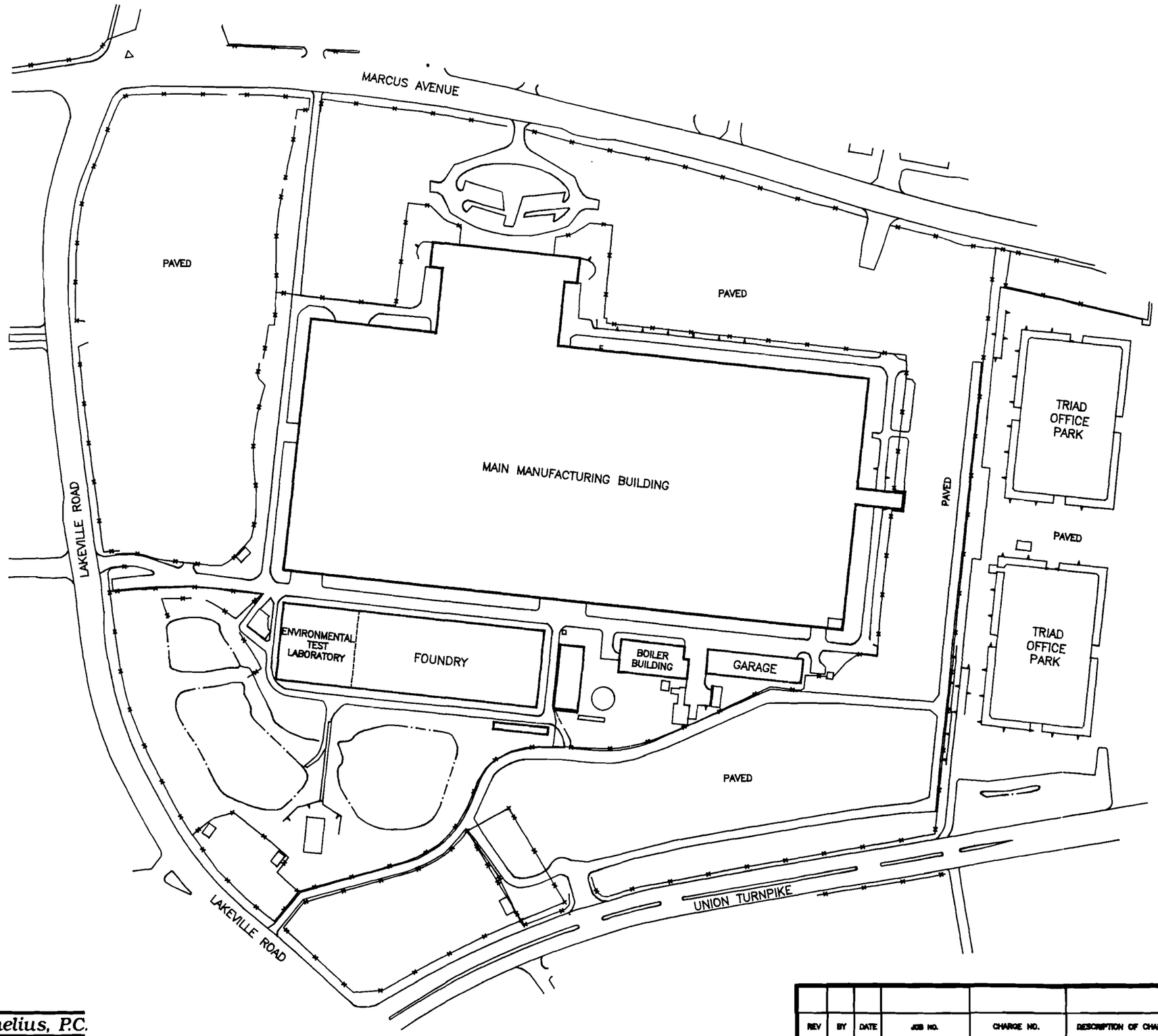
TABLE 2

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

Ground-Water Elevations

Well designation	Elevation of measuring point (feet above mean sea level)	Water-Level Elevation(feet above mean sea level)									
		06/08/89	01/10/90	08/16/90	05/21/91	05/29/91	06/25/91	07/30/91	08/16/91	09/17/91	11/14/91
1GU	143.77	37.93	42.04	43.37	44.97	45.15	45.29	44.97	41.58	43.71	44.85
1GL	144.41	37.84	41.96	43.31	--	--	--	44.88	41.99	44.05	45.35
1MI	144.39	38.51	42.54	43.00	43.93	43.49	44.64	43.93	40.44	42.24	43.37
1MI/L	144.55	--	42.60	42.70	44.23	43.61	44.20	43.35	--	42.51	43.87
1ML	144.89	--	--	--	43.89	44.16	44.17	43.37	41.23	42.56	43.97
2GL	128.35	42.10	45.87	44.82	47.37	47.21	46.51	46.65	44.64	47.30	47.87
2MI	128.57	42.11	45.90	44.73	47.77	47.11	46.37	46.47	44.57	47.29	47.76
2MU	125.90	--	--	--	--	--	--	47.50	--	47.37	47.99
3GL	139.50	41.67	45.45	45.91	47.87	47.76	47.66	47.65	45.60	57.66	48.28
4GL	144.81	38.93	41.44	45.65	46.57	46.91	47.27	47.31	45.01	46.95	46.76
4MI	145.10	36.81	41.56	42.51	43.50	43.90	44.20	44.02	41.99	43.56	44.39
5GL	130.32	40.53	42.31	45.35	46.59	43.67	47.12	47.00	44.45	46.88	47.46
5MI	130.31	39.94	41.91	44.69	46.41	46.27	46.46	46.28	44.89	46.15	46.84
6GL	128.30	40.30	44.04	44.29	46.43	46.88	47.05	46.78	44.94	46.81	47.28
6MI	128.80	--	--	--	--	--	--	45.93	--	47.00	47.57
7GL	149.76	36.25	39.84	43.40	45.29	44.94	45.56	45.18	42.98	44.72	45.37
8GU	120.42	43.03	46.75	46.57	49.17	48.86	49.67	49.40	46.55	48.10	49.08
8GL	120.32	40.40	41.50	42.02	45.66	45.75	43.32	43.09	42.44	44.89	45.76
9GL	126.94	41.71	45.43	44.90	46.90	46.59	45.69	45.62	44.43	46.67	37.23
10GL	126.03	39.84	43.68	43.44	45.41	45.45	45.28	44.89	--	45.71	45.61
11GL	129.02	40.81	44.70	45.35	44.18	46.96	47.12	47.10	45.49	46.79	47.45

Figures



Baldwin & Cornelius, P.C.

CONSULTING ENGINEERS – LAND SURVEYORS

UNISYS — PLANT ENGINEERING, GREAT NECK, NEW YORK 11020

TITLE:

FIGURE 1
SITE LOCATION
UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

REV	BY	DATE	JOB NO.	CHARGE NO.	DESCRIPTION OF CHANGE

TABLE OF ADDITIONS AND REVISIONS
USE ONLY PRINTS OF LATEST DATE AND CHANGE

SHEET _____ OF _____

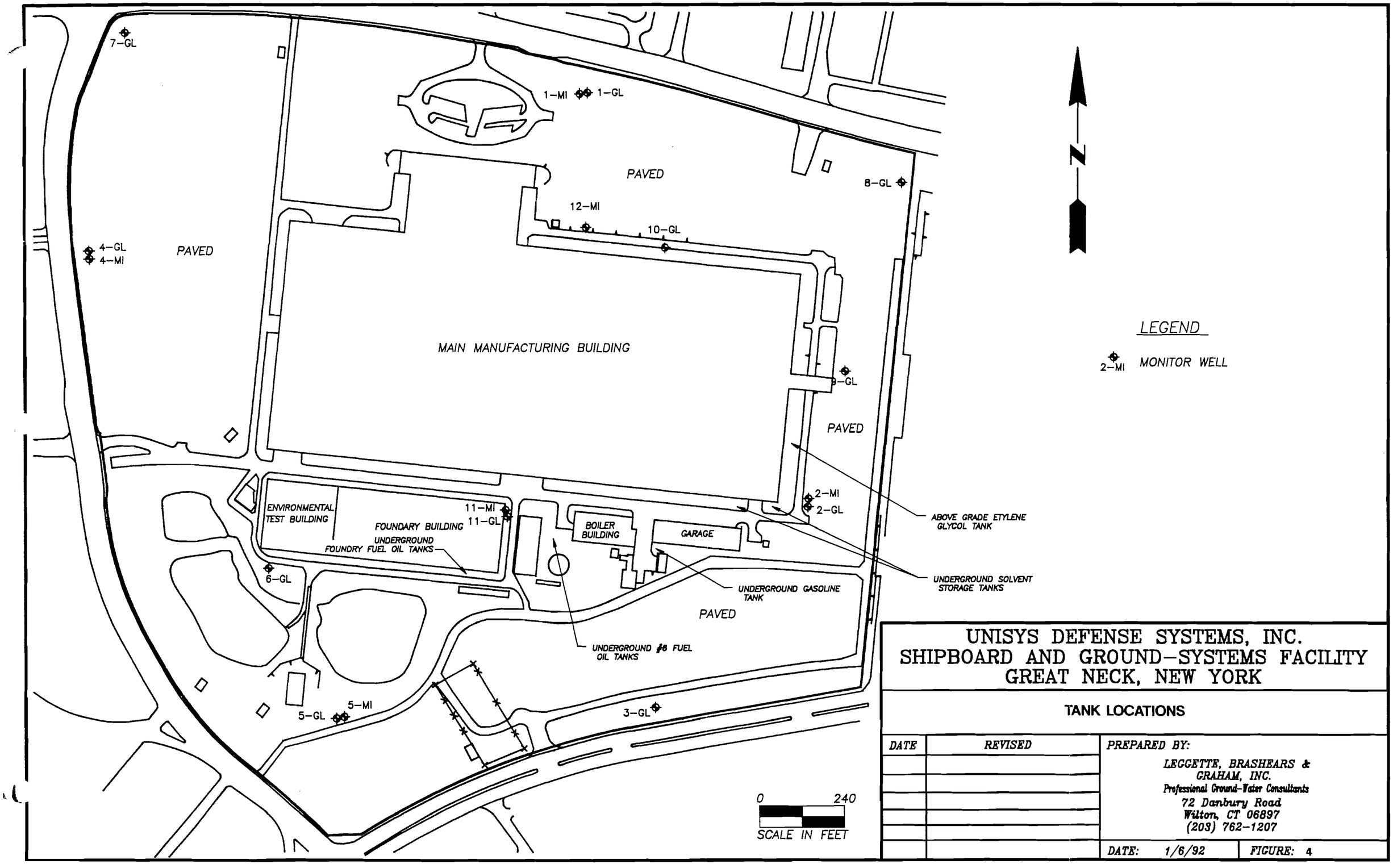
BALDWIN & CORNELIUS
210 EXPRESS STREET
PLAINVIEW, N.Y. 11803

DRAWN BY: 1/92 DATE

APPROVED BY DATE

SCALE

DRAWING NUMBER



UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND–SYSTEMS FACILITY
GREAT NECK, NEW YORK

TANK LOCATIONS

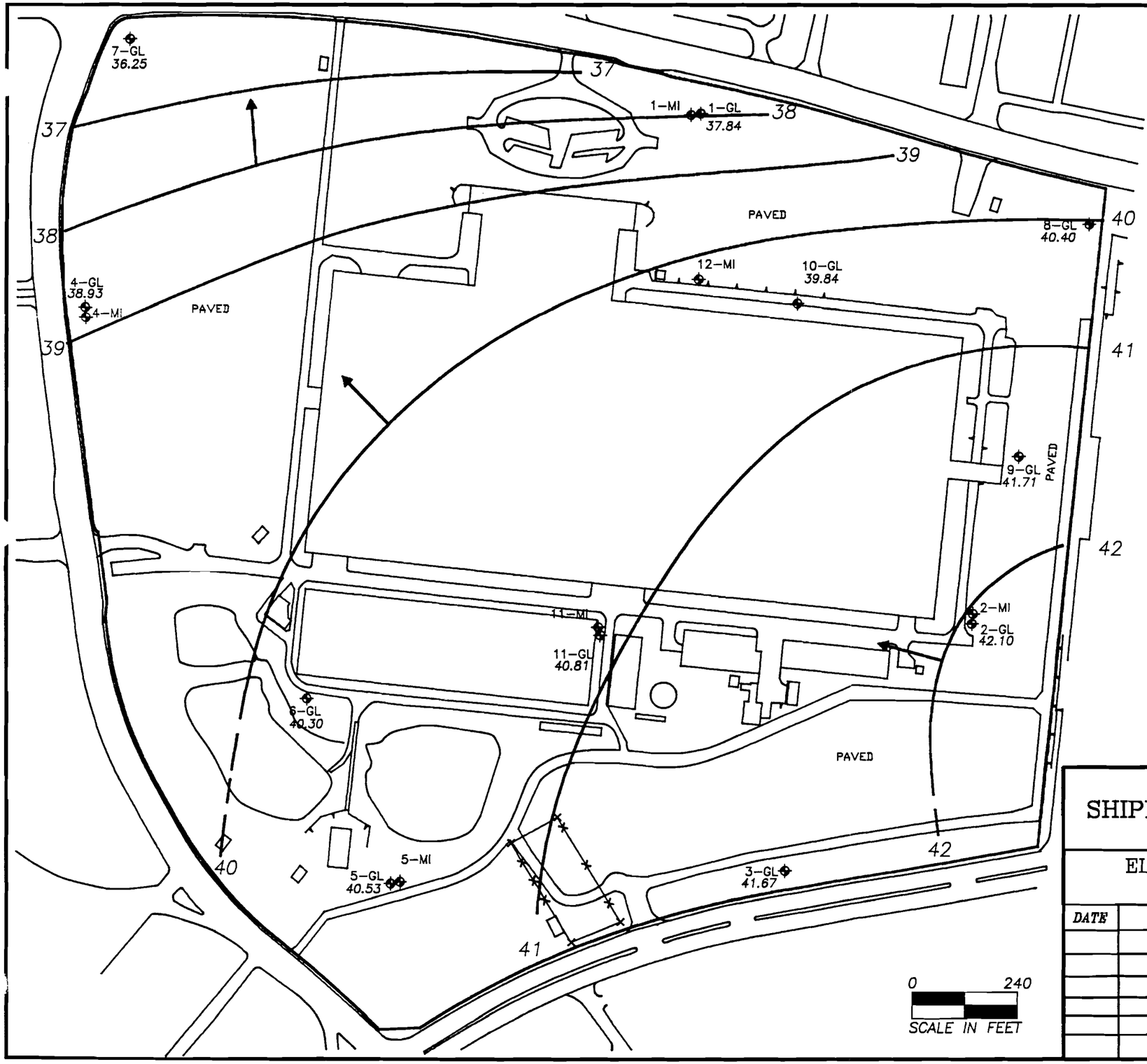
DATE	REVISED

PREPARED BY:

LECCETTE, BRASHEARS & GRAHAM, INC.
Professional Ground–Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762–1207

DATE: 1/6/92

FIGURE: 4



N

LEGEND

- MONITOR WELL
- 2–GL 42.10 WATER TABLE ELEVATION IN FEET
- 46 WATER ELEVATION CONTOUR IN FEET (DASHED WHERE INFERRED)
- DIRECTION OF GROUND–WATER FLOW

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND–SYSTEMS FACILITY
GREAT NECK, NEW YORK

ELEVATION OF THE WATER TABLE – GL WELLS
JUNE 8, 1989

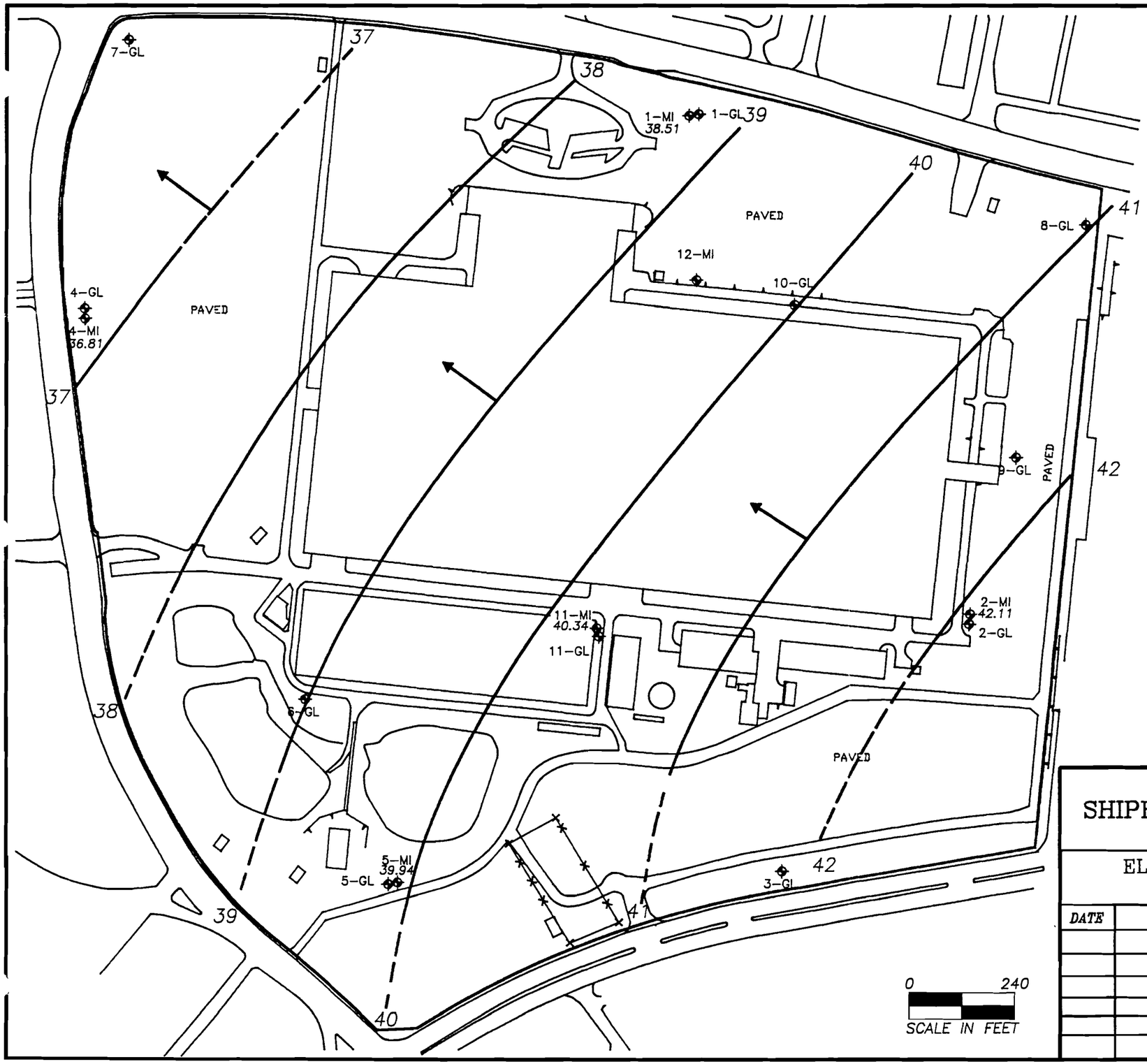
DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground–Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762–1207

DATE: 1/6/92

FIGURE: 8



N

LEGEND

- MONITOR WELL
- 2-MI 42.11 — WATER TABLE ELEVATION IN FEET
- 46 — WATER ELEVATION CONTOUR IN FEET (DASHED WHERE INFERRED)
- ← DIRECTION OF GROUND-WATER FLOW

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND-SYSTEMS FACILITY
GREAT NECK, NEW YORK

ELEVATION OF THE WATER TABLE – MI WELLS
JUNE 8, 1989

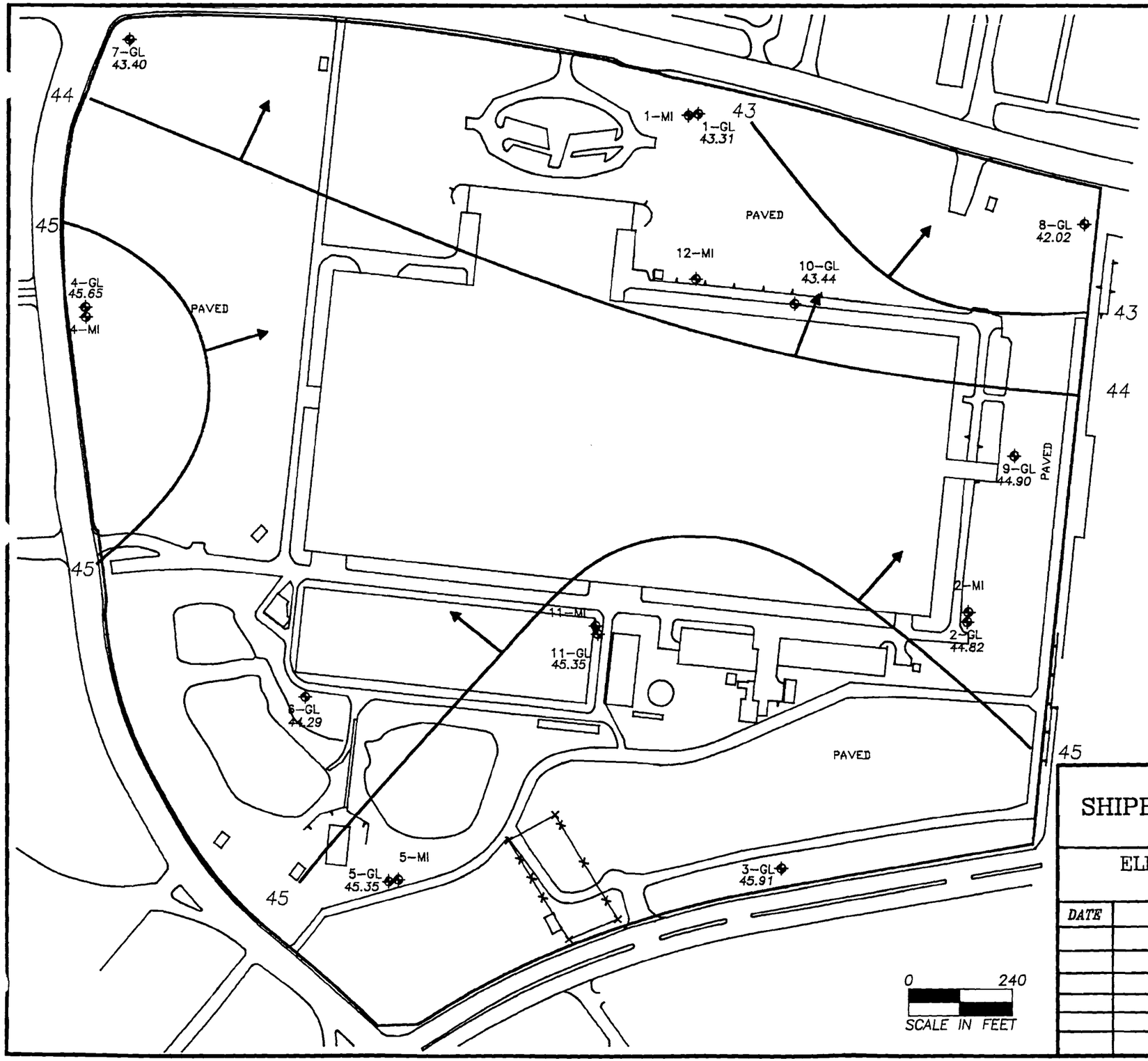
DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762-1207

DATE: 1/6/92

FIGURE: 9



N

LEGEND

- MONITOR WELL
- 2-GL 44.82 — WATER TABLE ELEVATION IN FEET
- 46 — WATER ELEVATION CONTOUR IN FEET (DASHED WHERE INFERRED)
- ← DIRECTION OF GROUND-WATER FLOW

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND-SYSTEMS FACILITY
GREAT NECK, NEW YORK

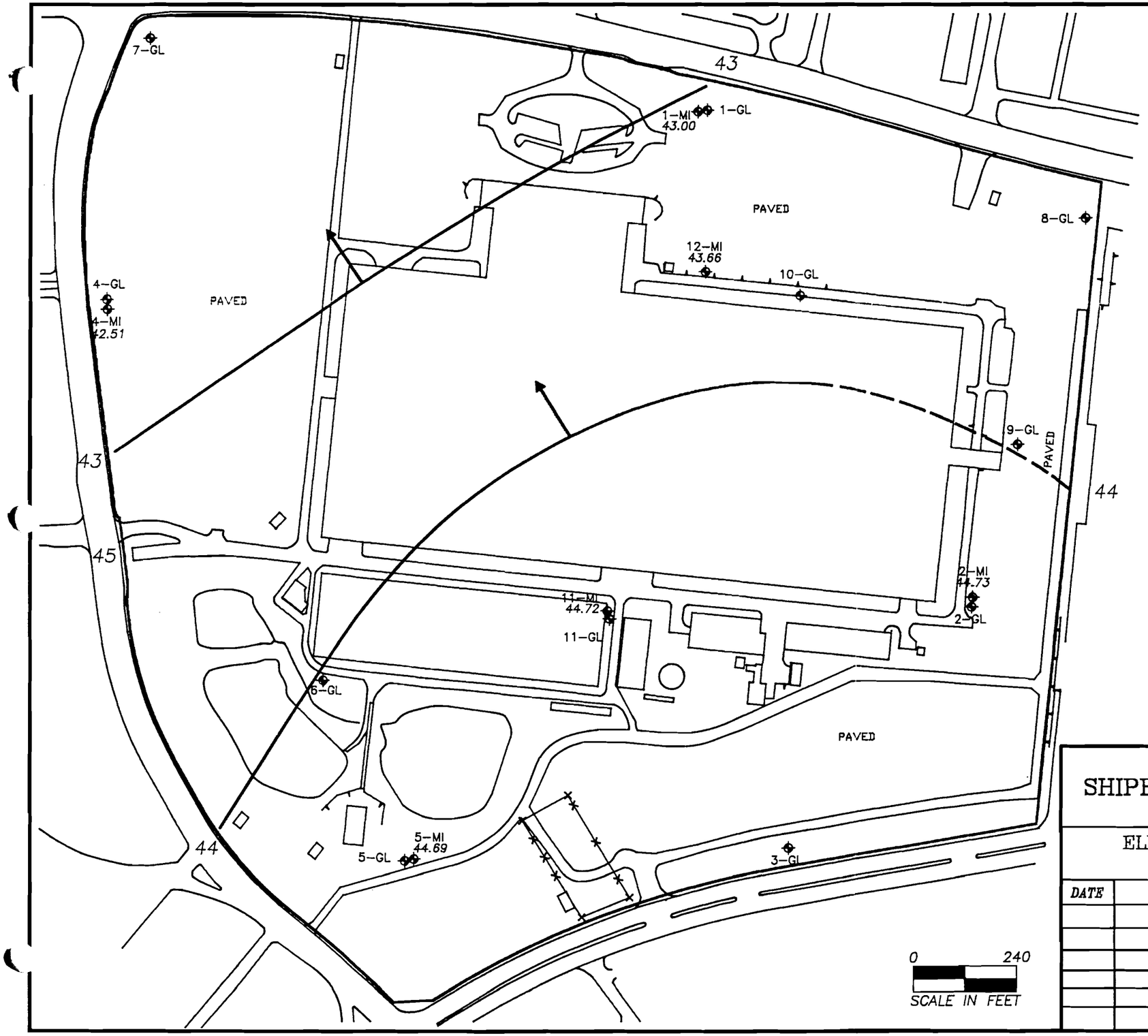
ELEVATION OF THE WATER TABLE - GL WELLS
AUGUST 16, 1990

DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762-1207

DATE: 1/6/92 FIGURE: 10



LEGEND

- MONITOR WELL
- 2–MI 44.73 — WATER TABLE ELEVATION IN FEET
- 46 — WATER ELEVATION CONTOUR IN FEET (DASHED WHERE INFERRED)
- DIRECTION OF GROUND–WATER FLOW

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND–SYSTEMS FACILITY
GREAT NECK, NEW YORK

ELEVATION OF THE WATER TABLE – MI WELLS
AUGUST 16, 1990

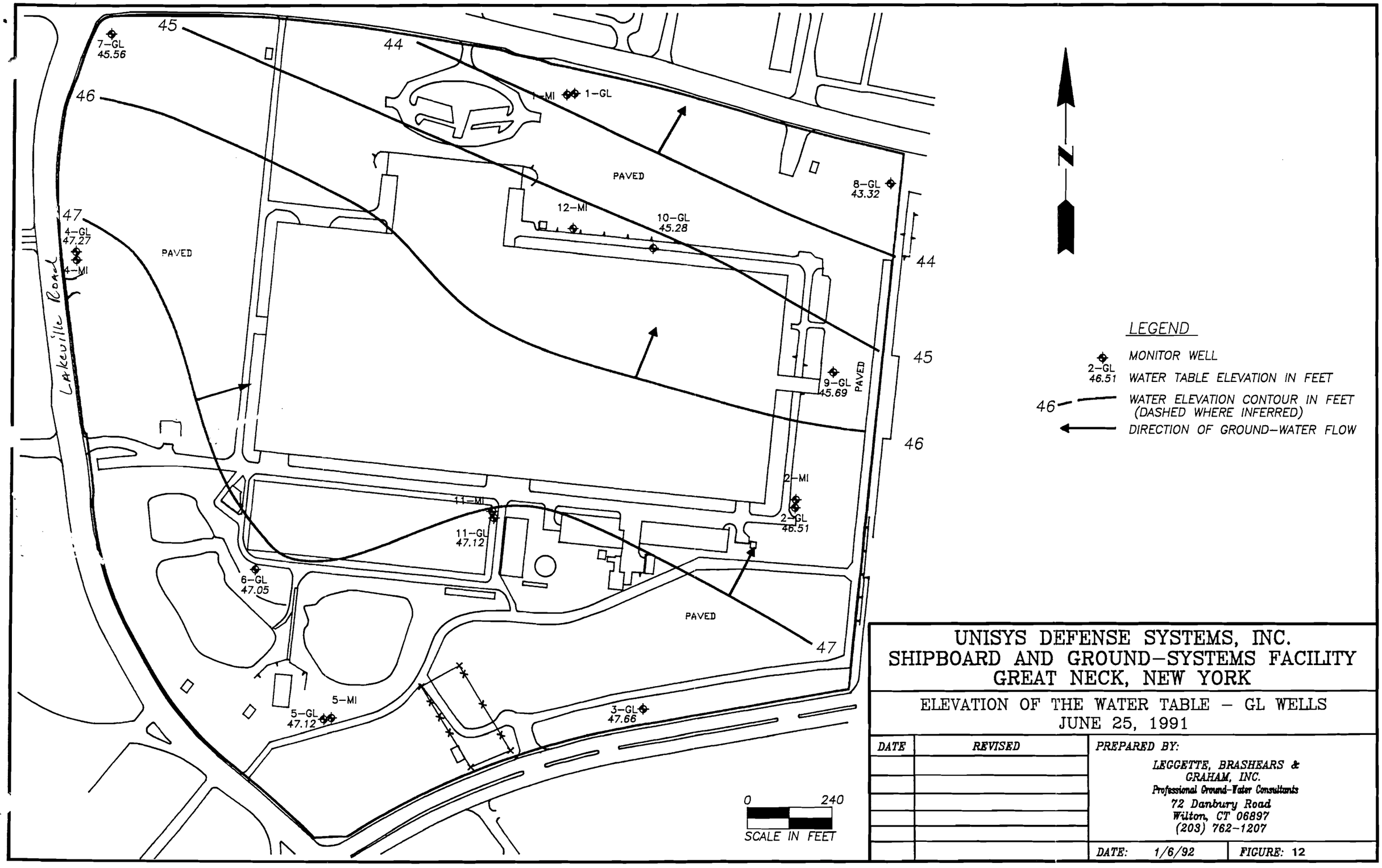
DATE	REVISED

PREPARED BY:

LECGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground–Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762–1207

DATE: 1/6/92

FIGURE: 11



UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND-SYSTEMS FACILITY
GREAT NECK, NEW YORK

ELEVATION OF THE WATER TABLE - GL WELLS
JUNE 25, 1991

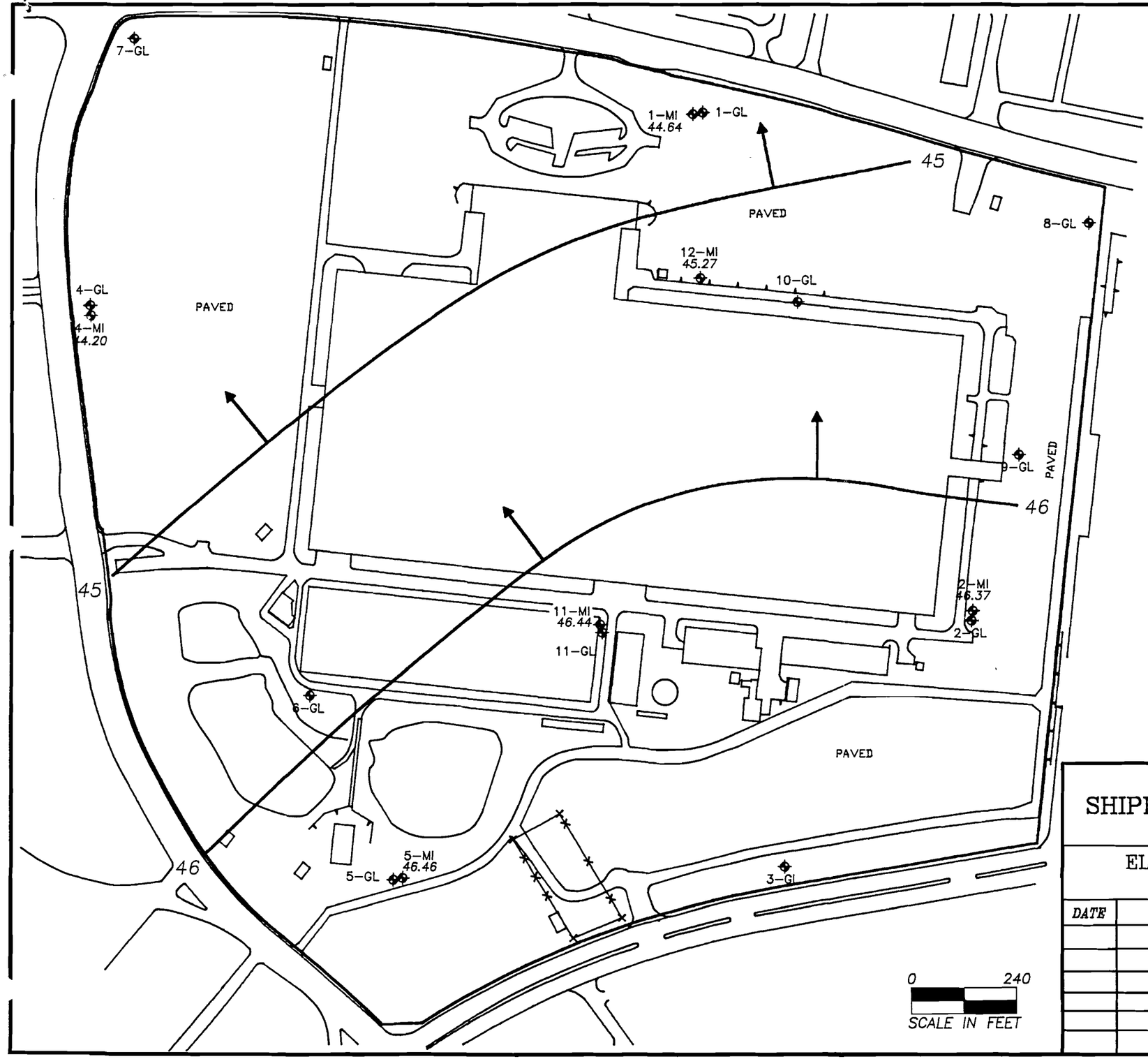
DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762-1207

DATE: 1/6/92

FIGURE: 12



N

LEGEND

- MONITOR WELL
- 2-MI 46.37 — WATER TABLE ELEVATION IN FEET
- 46 — WATER ELEVATION CONTOUR IN FEET (DASHED WHERE INFERRED)
- DIRECTION OF GROUND-WATER FLOW

UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND-SYSTEMS FACILITY
GREAT NECK, NEW YORK

ELEVATION OF THE WATER TABLE - MI WELLS
JUNE 25, 1991

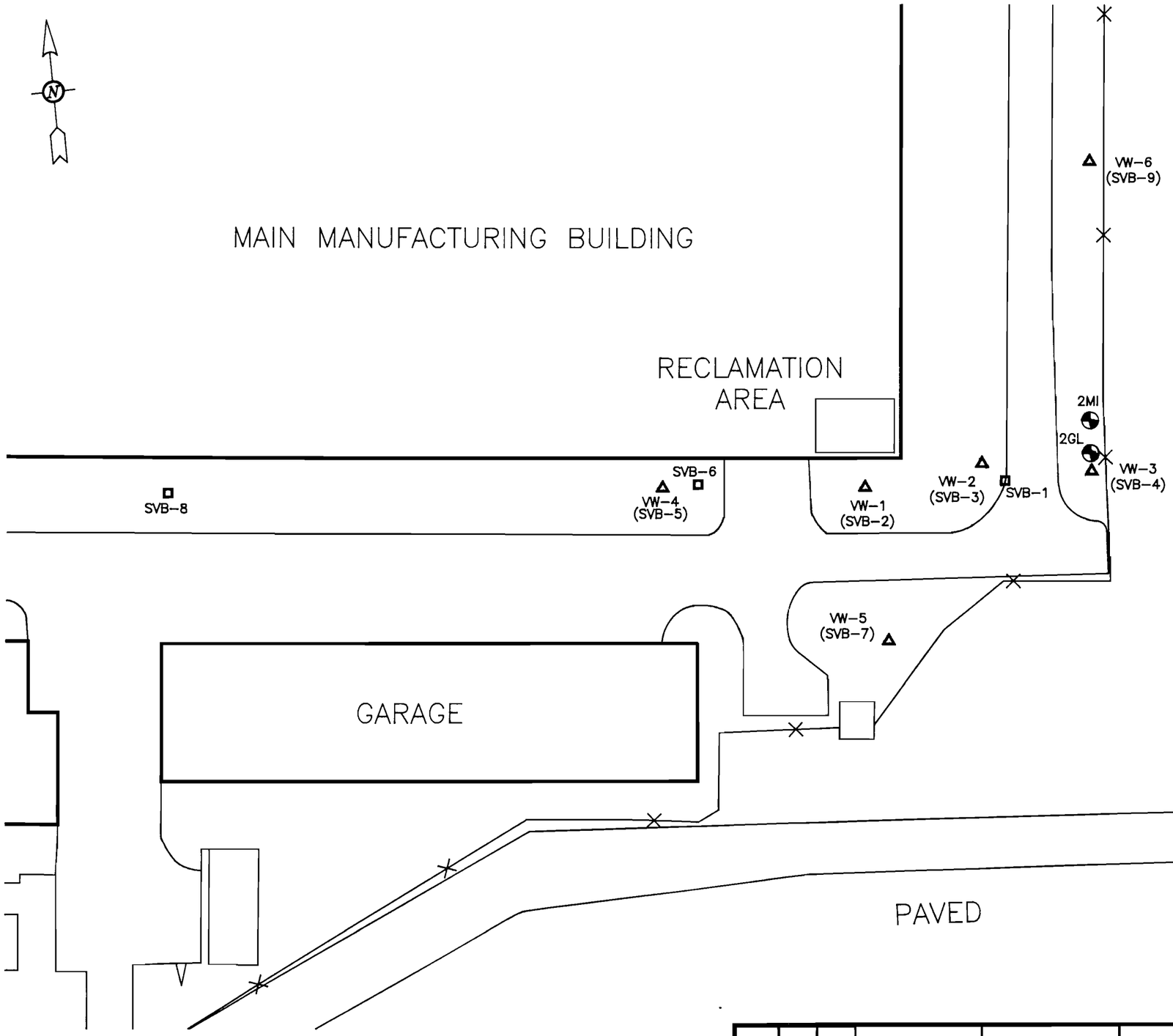
DATE	REVISED

PREPARED BY:

LEGGETTE, BRASHEARS & GRAHAM, INC.
Professional Ground-Water Consultants
72 Danbury Road
Wilton, CT 06897
(203) 762-1207

DATE: 1/6/92

FIGURE: 13



LEGEND

□ (SVB-1) . . . . . SOIL VENT BORING
△ VW-1 . . . . . VENT WELL
◔ . . . . . MONITORING WELL

MONITORING WELL EXPLANATION

GU . . . . . GLACIAL UPPER
GL . . . . . GLACIAL LOWER
MI . . . . . MAGOTHY INTERMEDIATE
ML . . . . . MAGOTHY LOWER

UNISYS
PLANT ENGINEERING
GREAT NECK, NEW YORK 11020

TITLE: SOIL BORING/ VENT WELL LOCATIONS
RECLAMATION AREA
UNISYS DEFENSE SYSTEMS, INC.
SHIPBOARD AND GROUND SYSTEMS FACILITY
GREAT NECK, NEW YORK

REV	BY	DATE	JOB NO.	CHARGE NO.	DESCRIPTION OF CHANGE

TABLE OF ADDITIONS AND REVISIONS
USE ONLY PRINTS OF LATEST DATE AND CHANGE

SHEET _____ OF _____

DRAWN BY: DATE

APPROVED BY DATE

SCALE

DRAWING NUMBER

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CONSULTING ENGINEERS – LAND SURVEYORS

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