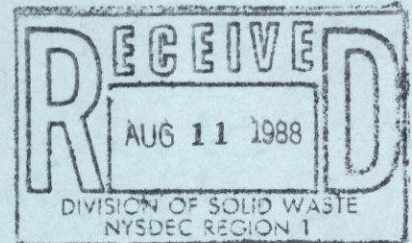


HYDROGEOLOGIC INVESTIGATION  
WORK PLAN



SY ASSOCIATES, INC.  
CERRO CONDUIT SITE  
SYOSSET, NEW YORK

JULY 1988

**H2M**GROUP

Holzmacher, McLendon & Murrell, P.C.  
CONSULTING ENGINEERS ARCHITECTS PLANNERS SCIENTISTS SURVEYORS  
MELVILLE, N.Y. RIVERHEAD, N.Y. FAIRFIELD, N.J.



# H2M GROUP

Holzmacher, McLendon and Murrell, P.C. • Holzmacher, McLendon and Murrell, Inc. • H2M Labs, Inc.  
Engineers, Architects, Planners, Scientists

575 Broad Hollow Road, Melville, N.Y. 11747-5076  
(516) 756-8000 • (201) 575-5400

October 26, 1988



Federal Express

Mr. Anthony Candela, P.E.  
Senior Sanitary Engineer  
New York State Dept. of Environmental Conservation  
Building 40 - SUNY  
Stony Brook, New York 11794

Re: Modification of Work Plan  
Relocation of MW-6A at Cerro Conduit Site  
Syosset, New York  
NYSDEC Site No. 1-30-002

Dear Mr. Candela:

As per our telephone conversation and agreement of October 25, 1988, regarding relocation of monitoring Well 6A at the Cerro Conduit Site in Syosset, H2M is providing the following amendments to the original work plan submitted in July of 1988.

Based upon new hydrogeologic information from the site investigation at the adjacent Syosset landfill, H2M will relocate MW-6A (Depth = 170 ft.) from its original proposed location near the site property line near Robbins Lane to a location closer to the sludge drying basins near the northeast corner of the facility (see attached Figure 1).

Relocation is based on the finding of a vertical flow component much greater than previously anticipated. The vertical velocity gradient based on site specific hydraulic conductivity, porosity and slope calculates to .03 ft./day or 11 ft./year. The horizontal velocity gradient calculates to .10 ft/day or 36.5 ft./year. Based on a 4 year inactive period, the end of the plume, if any, associated with the drying basins, would be approximately 146 ft. west of the basins. Additionally, with the

Mr. Anthony Candela, P.E.  
New York State Dept. of  
Environmental Conservation

October 26, 1988  
Page Two

assumed vertical velocity component of 11 ft./year and depth to water of approximately 110 ft., the plume, if any, would be at least 154 ft. deep. As per my discussions with Christopher Magee (DEC) and yourself, if the groundwater quality of this location is found to be generally free of contamination, additional site-specific data on the vertical component of flow will be necessary to prove that the well is properly located.

Please call if you have any questions or comments.

Very truly yours,

HOLZMACHER, McLENDON & MURRELL, P.C.



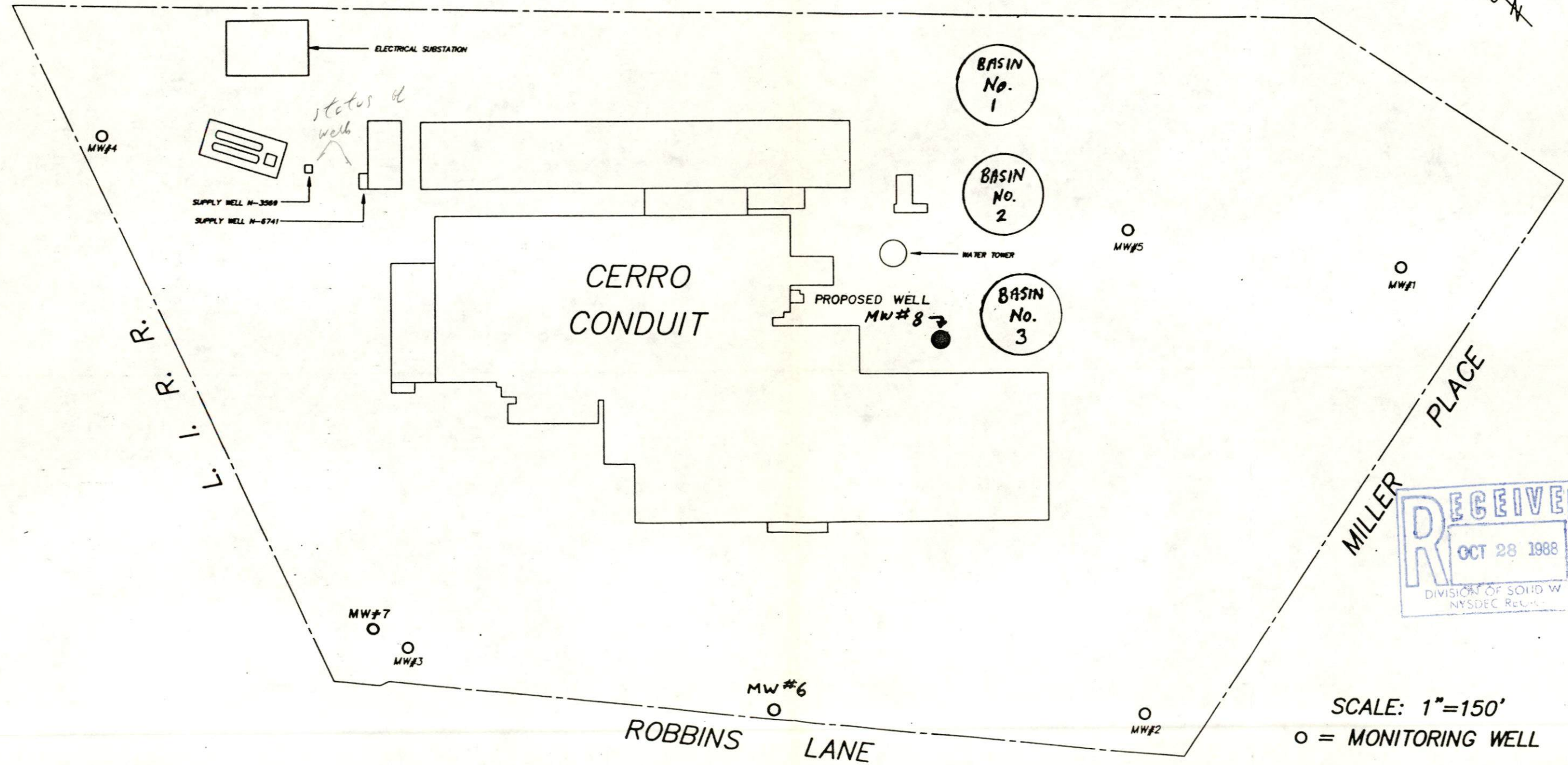
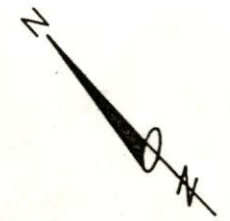
Michael V. Tumulty, P.E.  
Project Manager

MVT/lc

cc: J. Parisi (Sy Associates)  
D. Swersky, Esq. (Sy Associates)  
W. Sandler, Esq. (Sy Associates)  
J.V.N. Klein, Esq. (Meyer, Suozzi, English & Klein)  
Marsden Chen (DEC)  
Christopher Magee (DEC)



# SITE PLAN AND MONITORING WELL LOCATIONS



SCALE: 1"=150'  
○ = MONITORING WELL



*HYDROGEOLOGIC INVESTIGATION  
WORK PLAN*

**SY ASSOCIATES, INC.  
CERRO CONDUIT SITE  
SYOSSET, NEW YORK**

**JULY 1988**

**H2M GROUP**

**Holzmacher, McLendon & Murrell, P.C.**

CONSULTING ENGINEERS  
MELVILLE, N.Y.

ARCHITECTS PLANNERS  
RIVERHEAD, N.Y.

SCIENTISTS SURVEYORS  
FAIRFIELD, N.J.

WORK PLAN FOR  
HYDROGEOLOGIC INVESTIGATION

CERRO CONDUIT SITE

SYOSSET, NEW YORK

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APPENDIX A - QA/QC PLAN

WORK PLAN FOR  
HYDROGEOLOGIC INVESTIGATION  
CERRO CONDUIT SITE  
SYOSSET, NEW YORK

APRIL 1988  
REVISED JULY 1988

1.0 - INTRODUCTION

This second phase hydrogeologic investigation at the Cerro Conduit site will provide data to further define the nature and extent of groundwater contamination that may be present beneath the site. The first phase of the investigation was presented in a report prepared by H2M in December 1987.

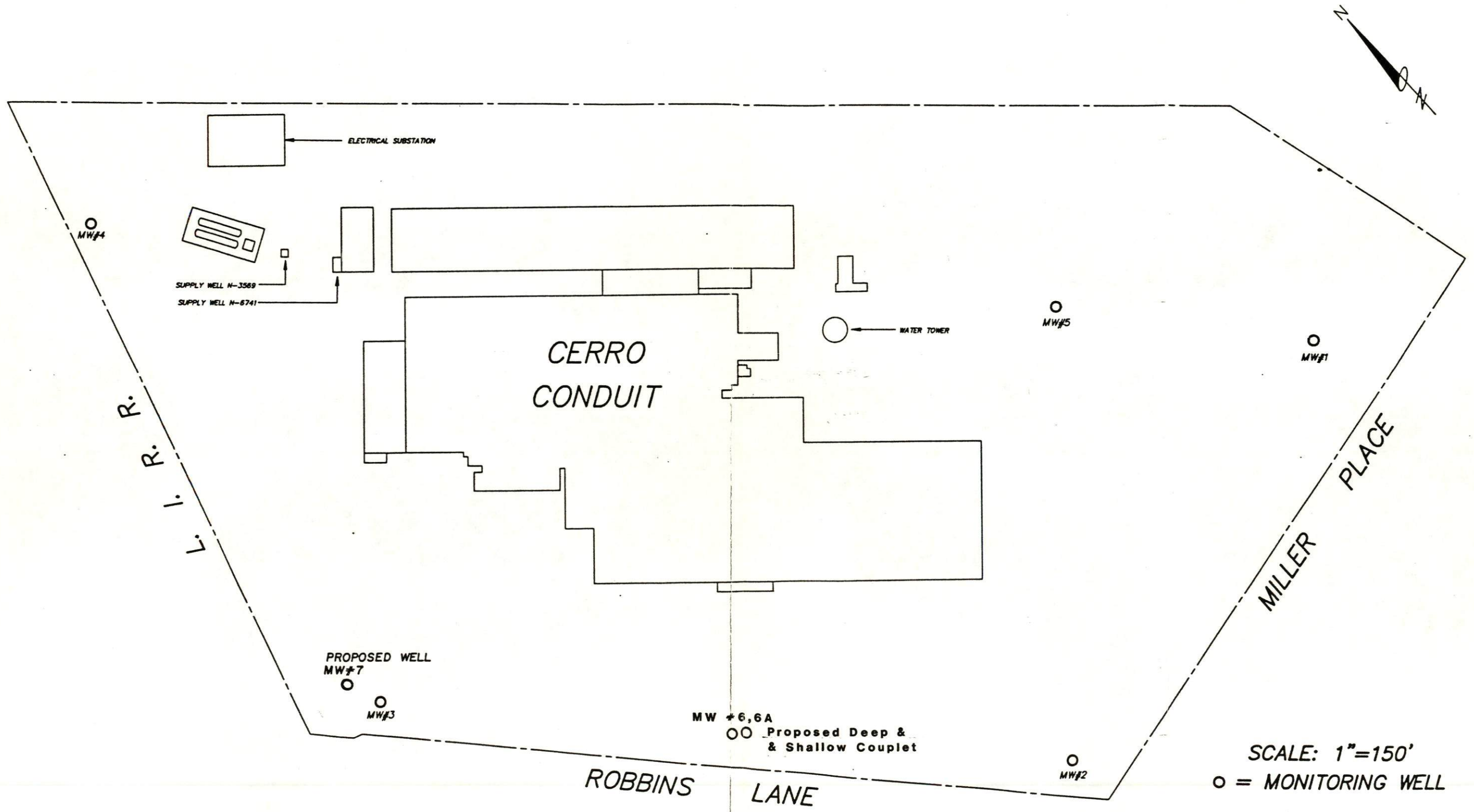
The work plan provides a project schedule and describes each task of the investigation including field activities and protocols. The two primary field activities are: (1) installation of three additional groundwater monitoring wells, and (2) groundwater sampling. Site-specific features and pertinent background information are also described below.

1.1 - SITE DESCRIPTION

The Cerro Conduit site is located along Robbins Lane and Miller Place in Syosset, New York. It is bounded on the north by an inactive landfill and on the west by the Long Island Rail Road, as indicated in Figure 1. The total area of the site is approximately 40 acres.



# SITE PLAN AND MONITORING WELL LOCATIONS



SCALE: 1"=150'  
 ○ = MONITORING WELL

The site is currently classified as a Class 4 site on the New York State Department of Environmental Conservation (NYSDEC) list of inactive hazardous waste disposal sites. A Class 4 site is defined as a site that has been properly closed, but requires continued management.

The aforementioned landfill, north of the site, is known as the Syosset Landfill and is listed on the United States Environmental Protection Agency's (USEPA) National Priorities List (NPL) of uncontrolled hazardous waste sites. It is also classified as a Class 2 site on the NYSDEC list of inactive hazardous waste disposal sites. A Class 2 site is defined as a site that requires action and presents a significant threat to public health or the environment.

The entire Cerro Conduit site is currently commercially inactive, although most pre-existing structures are still intact and in good condition. In addition to the buildings and warehouses on site, there is also an access track to the Long Island Rail Road, a Long Island Lighting Company electrical substation, a large industrial water tower and two high-capacity water supply wells.

#### 1.2 - BACKGROUND

The "Cerro Conduit Site", as referred to in the work plan, is the location where the Cerro Conduit Company operated a copper rolling, drawing and extruding facility in Syosset, N.Y. In the past, the facility had employed up to 100 people. The site is no longer owned by Cerro Conduit Company and no other manufacturing



activity has occurred at the site since the plant was closed in 1986.

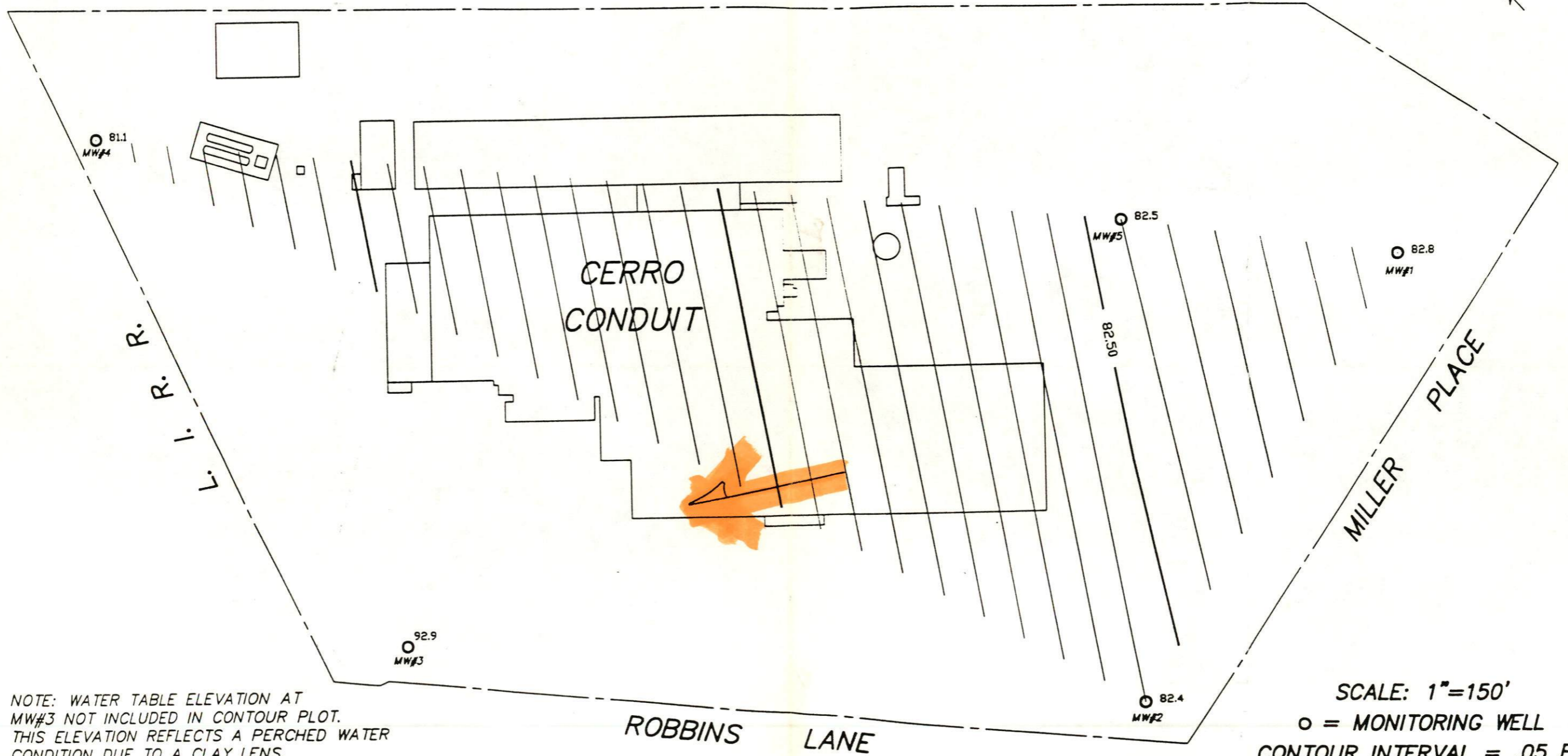
The current owners of the property, Sy Associates, Inc., are conducting this study to determine the nature and extent of groundwater contamination that may have occurred due to the former activities of Cerro Conduit Co. and/or neighboring land users. This second phase hydrogeologic investigation is a continuation of the first phase study completed in December 1987 by H2M. The Cerro Conduit Co. has also completed an independent investigation of possible soil contamination. By prior agreement, any soil contamination existing on-site will be remediated by the Cerro Conduit Co.

The first phase hydrogeologic study made the following conclusions:

1. The site is located over a regional groundwater divide of the Magothy aquifer. Groundwater flow is typified by significant vertical flow and variable flow direction. Groundwater flow directions over a period from August 1987 through April 1988 are shown in Figures 2-9.

2. Groundwater samples collected from the five on-site monitoring wells indicate that at the zones of the aquifer screened by those wells, organic contamination is not present. Furthermore, although there is indication that groundwater quality has been impacted by inorganics, inorganic contamination is not present in significant concentrations at these locations.

# GROUNDWATER CONTOURS OF 8/21/87

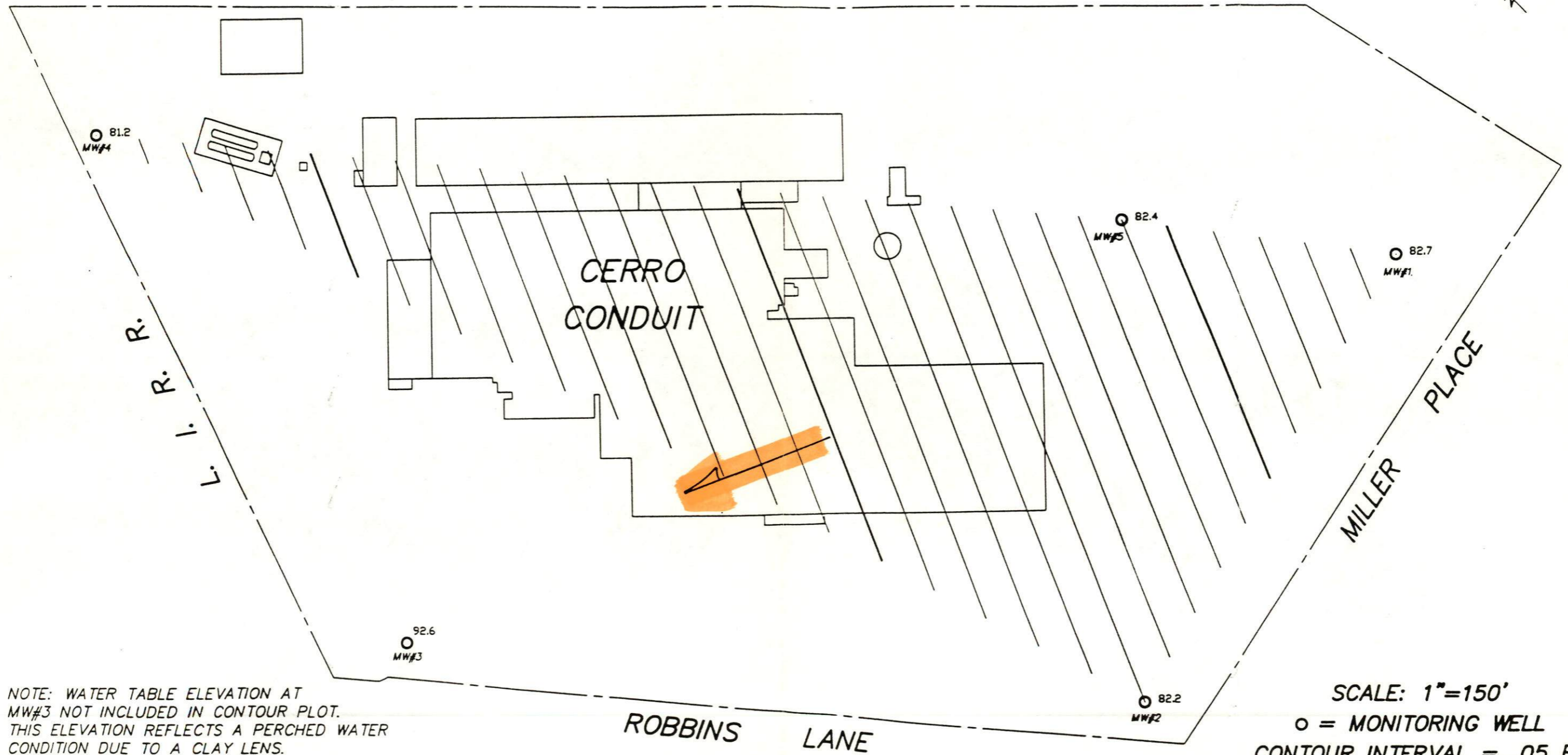


NOTE: WATER TABLE ELEVATION AT MW#3 NOT INCLUDED IN CONTOUR PLOT. THIS ELEVATION REFLECTS A PERCHED WATER CONDITION DUE TO A CLAY LENS.

SCALE: 1"=150'  
 ○ = MONITORING WELL  
 CONTOUR INTERVAL = .05 FT



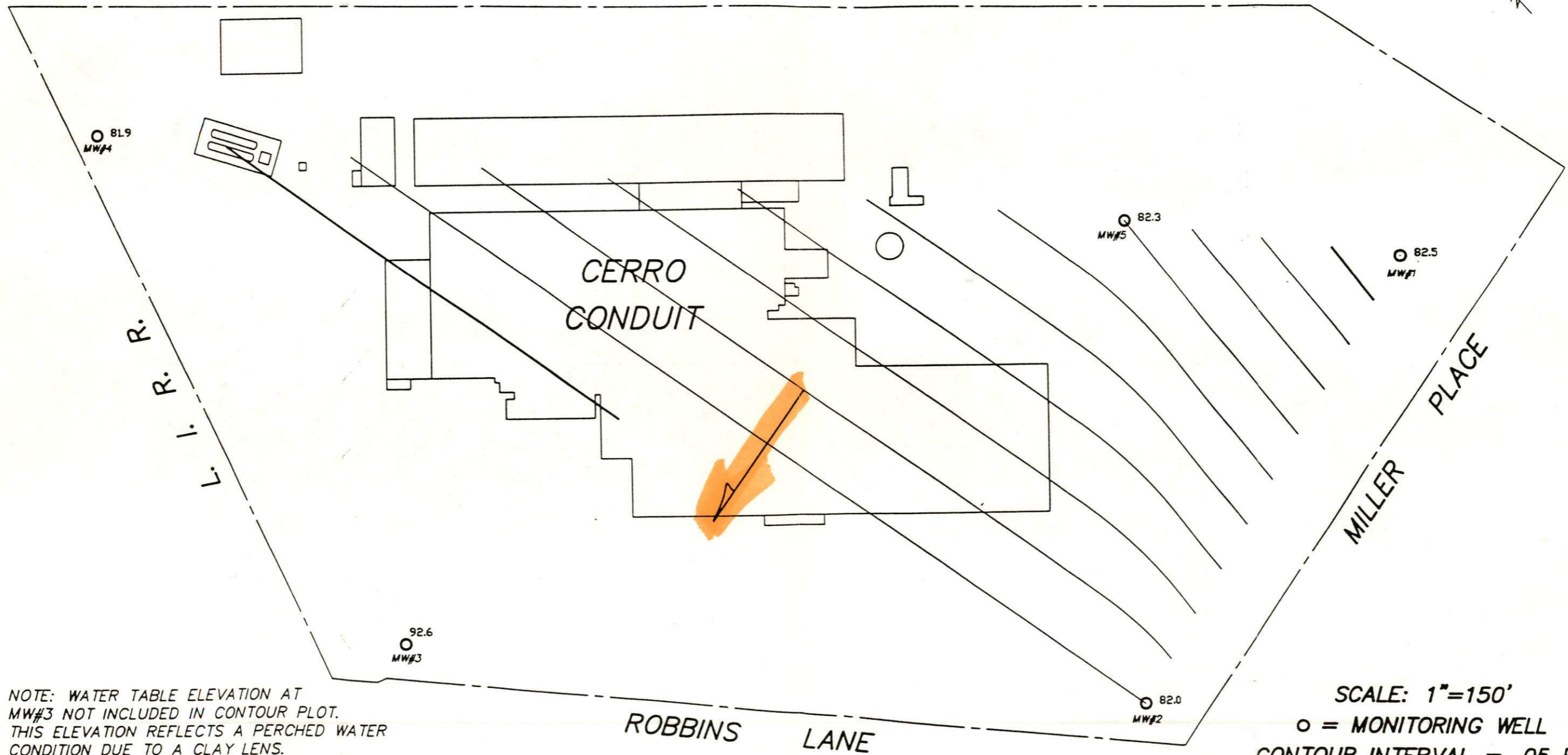
# GROUNDWATER CONTOURS OF 8/28/87



NOTE: WATER TABLE ELEVATION AT  
MW#3 NOT INCLUDED IN CONTOUR PLOT.  
THIS ELEVATION REFLECTS A PERCHED WATER  
CONDITION DUE TO A CLAY LENS.

SCALE: 1"=150'  
○ = MONITORING WELL  
CONTOUR INTERVAL = .05 FT

# GROUNDWATER CONTOURS OF 9/14/87

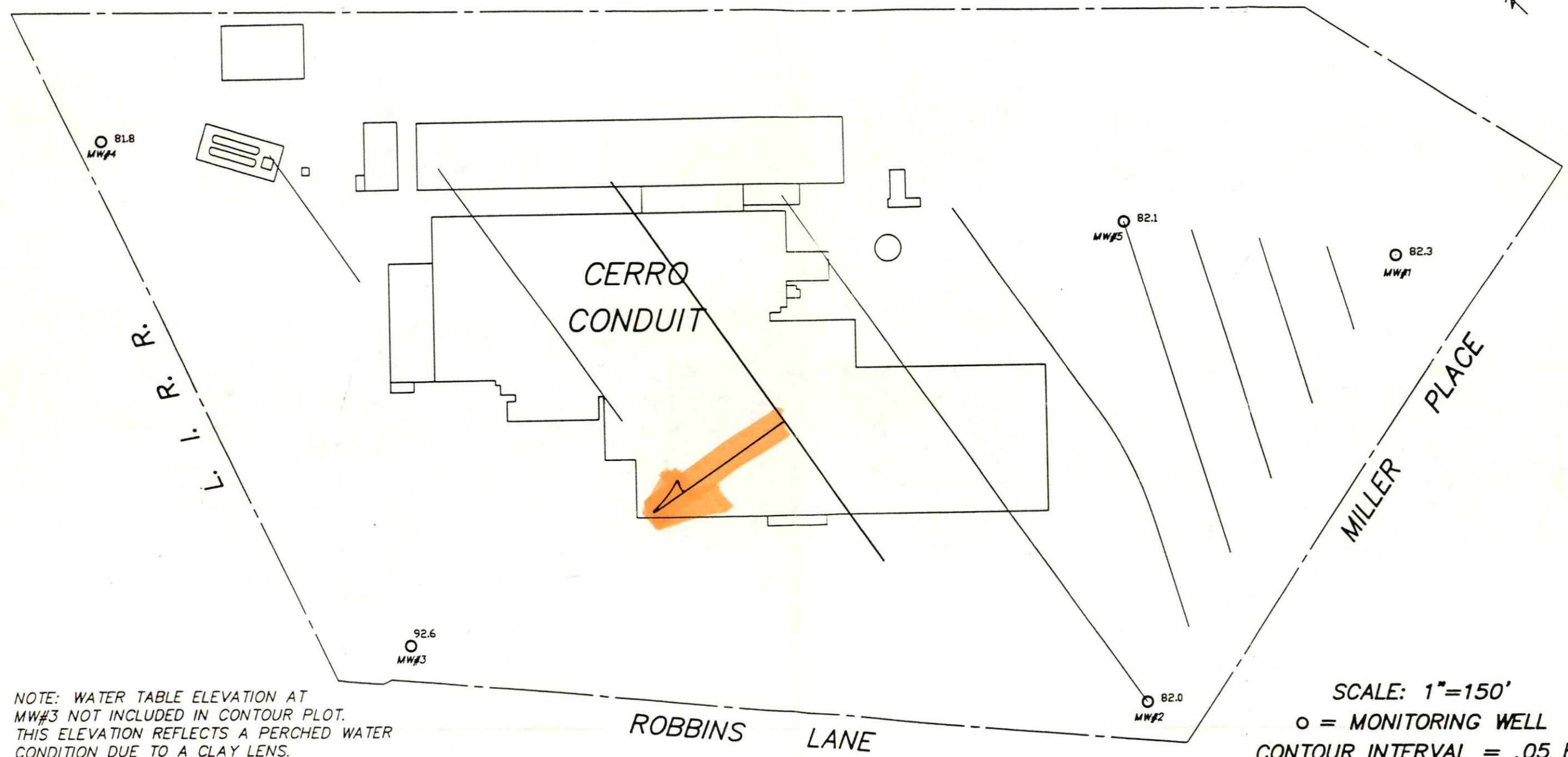


NOTE: WATER TABLE ELEVATION AT  
MW#3 NOT INCLUDED IN CONTOUR PLOT.  
THIS ELEVATION REFLECTS A PERCHED WATER  
CONDITION DUE TO A CLAY LENS.

SCALE: 1"=150'  
○ = MONITORING WELL  
CONTOUR INTERVAL = .05 FT



# GROUNDWATER CONTOURS OF 9/28/87

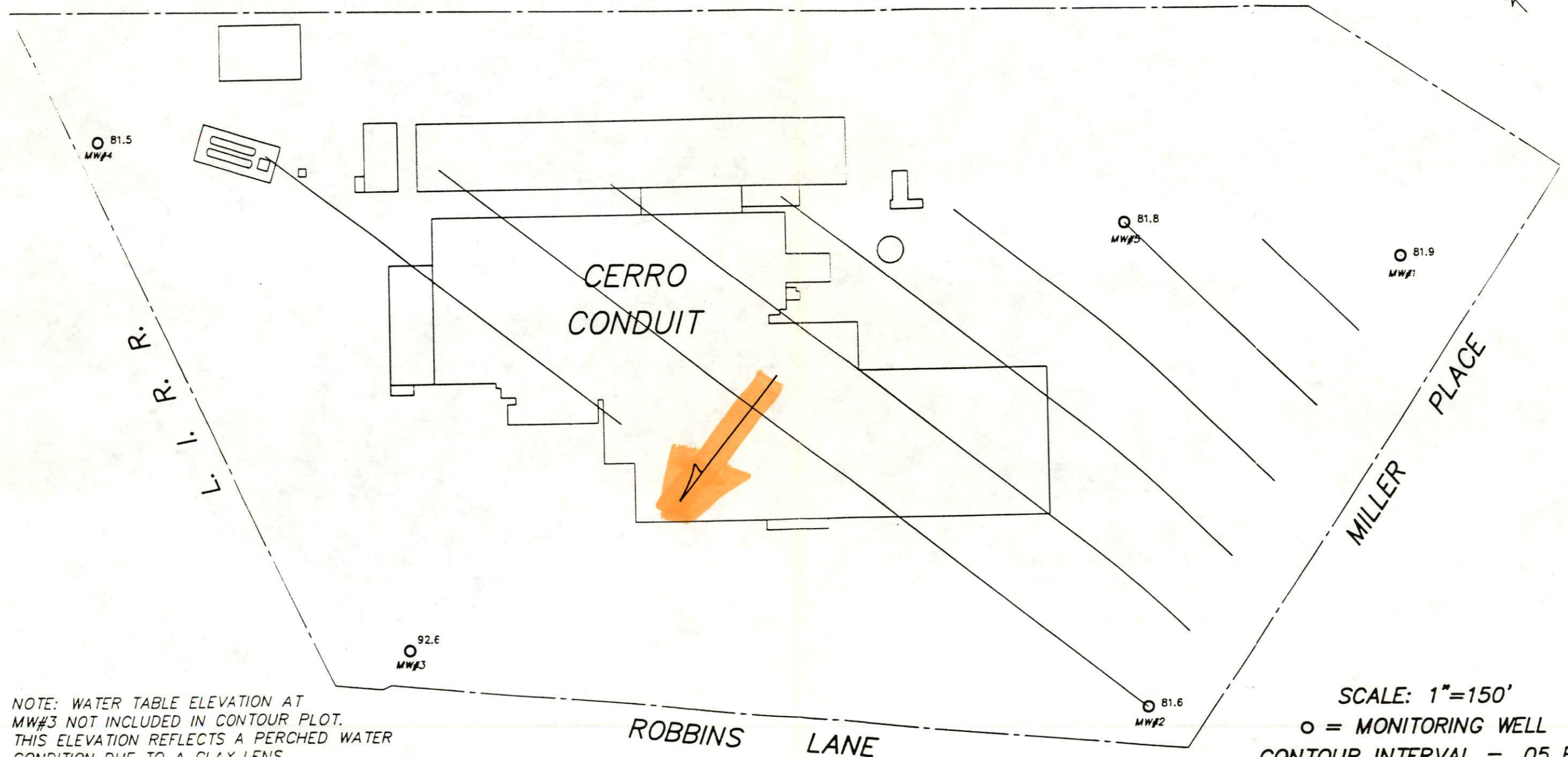


NOTE: WATER TABLE ELEVATION AT MW#3 NOT INCLUDED IN CONTOUR PLOT. THIS ELEVATION REFLECTS A PERCHED WATER CONDITION DUE TO A CLAY LENS.

SCALE: 1"=150'  
 ○ = MONITORING WELL  
 CONTOUR INTERVAL = .05 FT



# GROUNDWATER CONTOURS OF 10/29/87

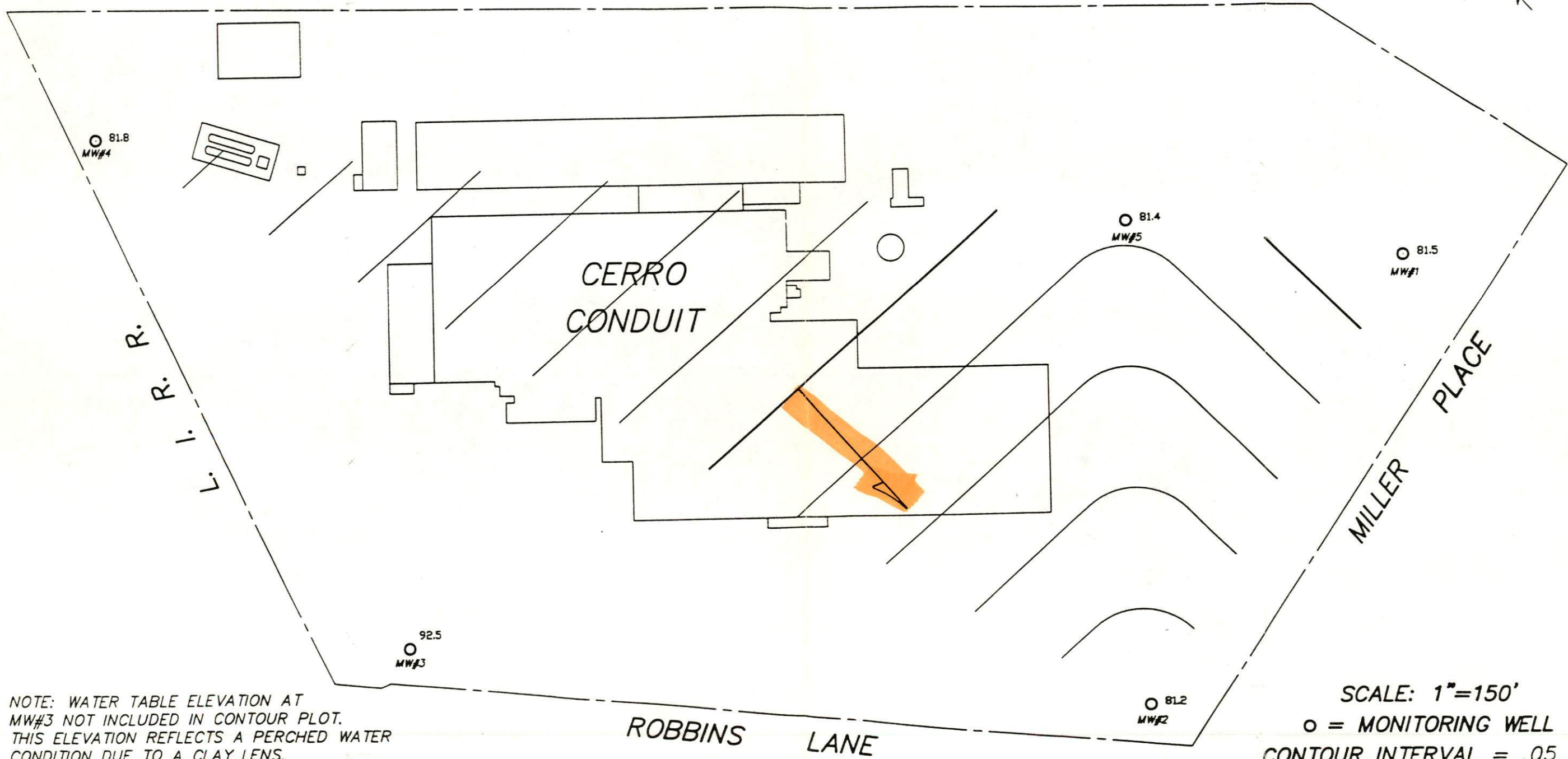
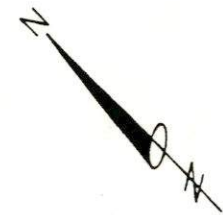


NOTE: WATER TABLE ELEVATION AT MW#3 NOT INCLUDED IN CONTOUR PLOT. THIS ELEVATION REFLECTS A PERCHED WATER CONDITION DUE TO A CLAY LENS.

SCALE: 1"=150'  
 ○ = MONITORING WELL  
 CONTOUR INTERVAL = .05 FT



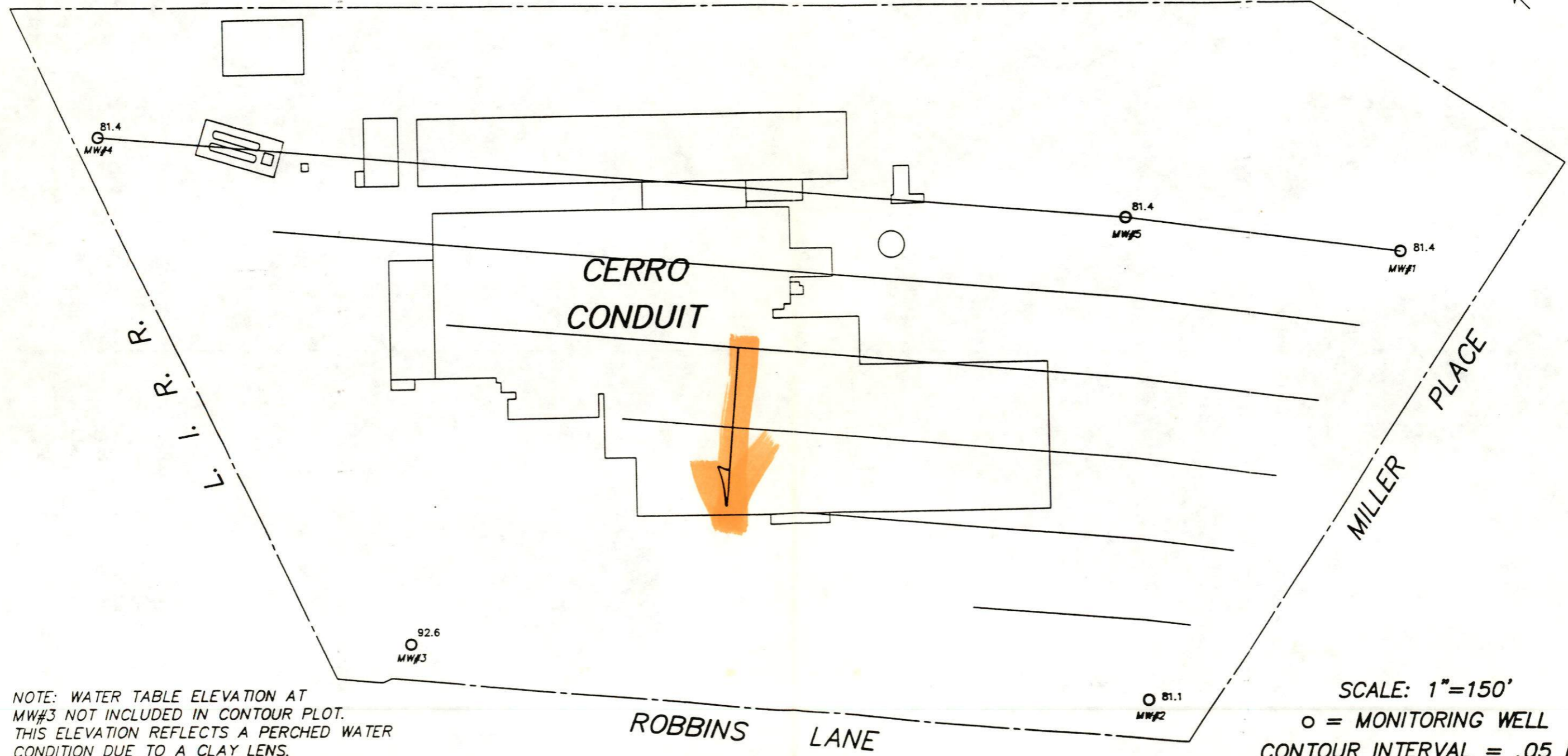
# GROUNDWATER CONTOURS OF 12/2/87



NOTE: WATER TABLE ELEVATION AT  
MW#3 NOT INCLUDED IN CONTOUR PLOT.  
THIS ELEVATION REFLECTS A PERCHED WATER  
CONDITION DUE TO A CLAY LENS.

SCALE: 1"=150'  
○ = MONITORING WELL  
CONTOUR INTERVAL = .05 FT

# GROUNDWATER CONTOURS OF 12/14/87

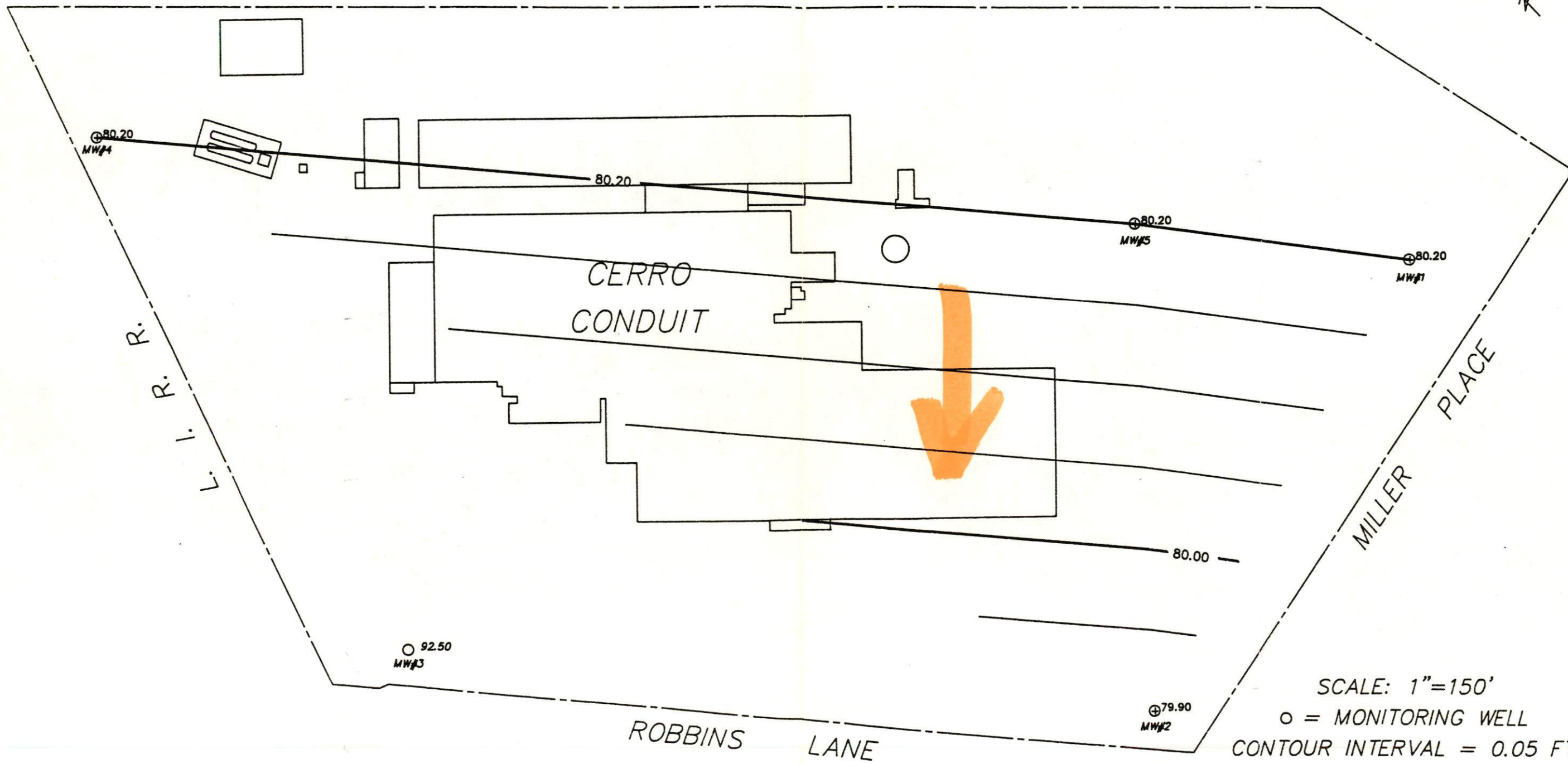
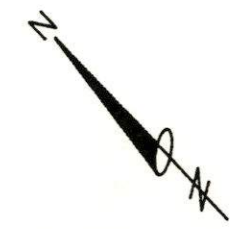


NOTE: WATER TABLE ELEVATION AT  
MW#3 NOT INCLUDED IN CONTOUR PLOT.  
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CONDITION DUE TO A CLAY LENS.

SCALE: 1"=150'  
○ = MONITORING WELL  
CONTOUR INTERVAL = .05 FT



# GROUNDWATER CONTOURS OF 4/19/88



SCALE: 1"=150'  
○ = MONITORING WELL  
CONTOUR INTERVAL = 0.05 FT

3. Based upon the hydrogeologic information collected and developed, and the adequate volume of water quality data reviewed, it is apparent that the now abandoned on-site supply wells N-3569 and N-6741 had previously intercepted a portion of the plume coming from the Syosset Landfill. This landfill is currently being investigated under a Remedial Investigation/Feasibility Study with oversight by the USEPA.

4. With the depth to the water table surface at approximately 100 feet and the depth to the bottom of the on-site supply wells at 350-423 feet, the groundwater is beyond the range of excavations associated with physical development of the site with structures. Furthermore, additional development of the site would not prevent remediation of regional groundwater problems if deemed necessary.



## 2.0 - WORK PLAN TASKS

The tasks required for the second phase hydrogeologic investigation are:

- (1) Installation of three (3) additional groundwater monitoring wells;
- (2) Survey of the three (3) proposed wells;
- (3) Performance of a groundwater quality monitoring program by obtaining samples from the existing and newly installed wells; and
- (4) Development and submission of a final report.

### 2.1 - GROUNDWATER MONITORING WELL INSTALLATION

The NYSDEC has required the installation of three (3) additional groundwater monitoring wells at the Cerro Conduit site. The tentative locations of the two proposed wells, designated as MW-6, 6A and 7, are shown in Figure 1.

Monitoring well MW-7 will be placed in the vicinity of well MW-3 and will be drilled to a maximum depth of approximately 150 feet from grade. A greater depth than well MW-3 (110 feet) is required to penetrate through a lense of silt/clay at this location. A field decision may be made to drill shallower than 150 feet or deeper if continuous silt/clay is encountered.

A shallow and deep monitoring well couplet (MW-6 and 6A) will be installed near Robbins Lane, midway between existing wells MW-2 and 3 to allow for a better determination of the vertical flow distribution and groundwater flow hydraulics. Well MW-6

will be approximately 110 feet deep, while MW-6A will be approximately 170 feet deep.

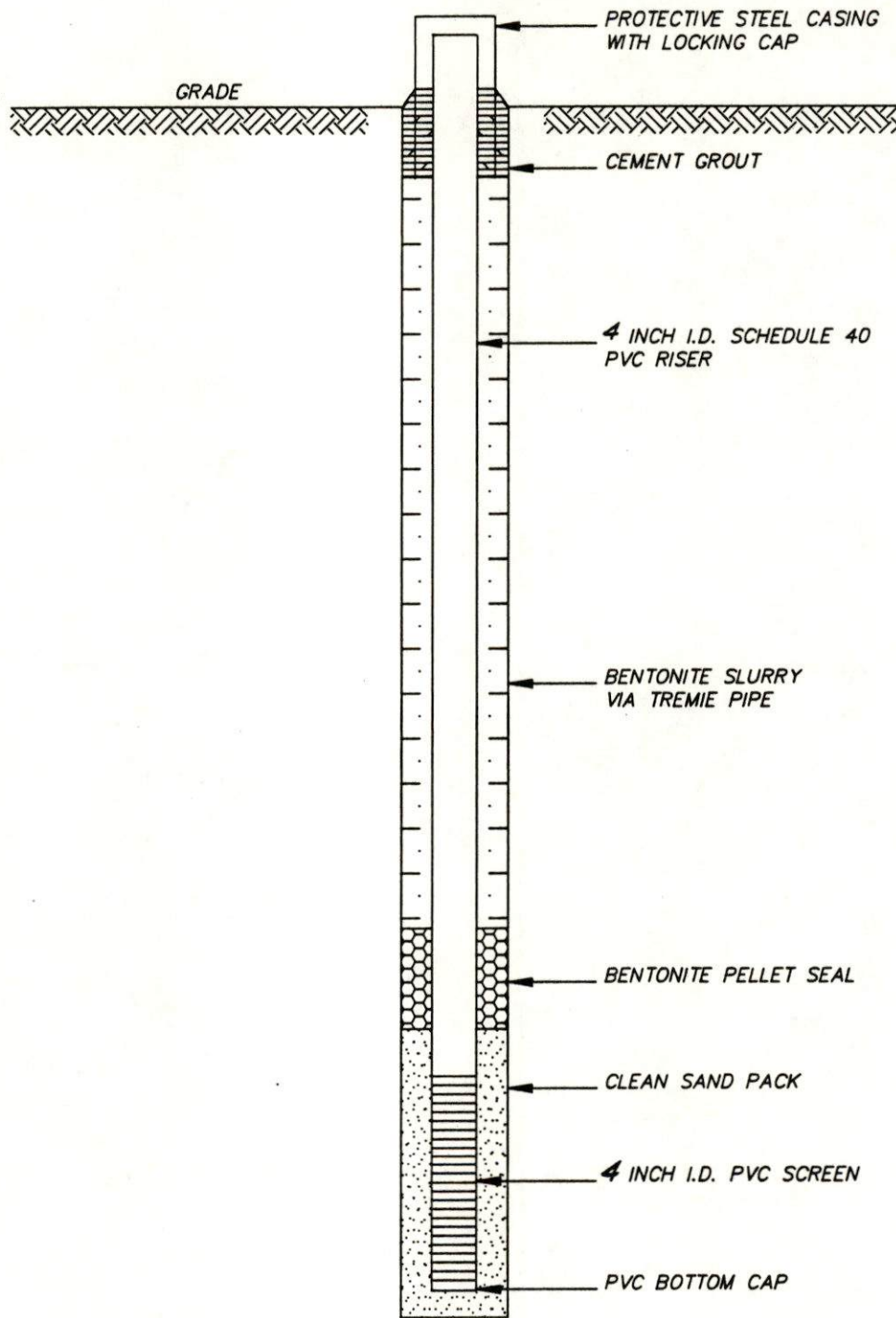
After the installation of MW-6, 6A and 7 and the generation of water level monitoring and water quality data, along with information from the USEPA's cluster wells at the Syosset landfill, additional deep monitoring well(s) will be installed. The well(s) will be sited near the property boundaries and in the vicinity of the decommissioned clarifier at a depth selected by the NYSDEC.

Procedures to be used in well installation will follow NYSDEC monitoring well installation protocols. Every attempt will be made to install the shallow wells using methods that do not require drilling fluids. If it is necessary to use drilling fluids, it will be limited to clean, potable water.

The deep monitoring wells may be drilled to the desired depth with mud rotary methods. These drilling fluids shall consist of potable water and 100 percent bentonite mix (no polymers or additives). The mud and drill cuttings from the hole will be contained in drums immediately adjacent to the well.

A schematic cross section of the proposed monitoring wells' construction is shown in Figure 10. The monitoring well casing and screen will consist of 4-inch I.D., Schedule 40, flush joint, threaded PVC riser and 10 feet of #10 slot-size, 4-inch I.D. PVC well screen. Joint compound will not be used. A 2-foot thick seal of bentonite pellets will be placed above the screened zone and the open space below the screened zone will be filled with a quartz sand filter pack, extending 2 feet above the screened





OVERBURDEN WELL  
SECTION VIEW  
(NO SCALE)



**HOLZMACHER, McLENDON & MURRELL, P.C.**  
CONSULTING ENGINEERS, ENVIRONMENTAL SCIENTISTS, ARCHITECTS and PLANNERS

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interval. The remainder of the open space above the bentonite pellets will be backfilled with a bentonite/cement grout. All pelletized, granular and slurry well construction material will be placed via tremie or pressure grouted.

Each well will be adequately developed by pumping with a submersible pump. Wells will be developed until bailed samples display a turbidity of 50 NTU or less as measured with a nephelometer. The development water will also be contained in drums. A locking protective steel casing will be installed over the top of the PVC riser and cemented into place.

During drilling operations, steps will be taken to ensure the integrity of each monitoring well. These procedures are detailed in a Quality Assurance/Quality Control (QA/QC) Plan for the site (see Appendix A).

All large drilling equipment, sampling tools, well casing, screen and development equipment will be decontaminated with a high pressure steam cleaner using potable water, or by some other NYSDEC approved protocol. Steam cleaning will take place on a stage constructed for that purpose. A designated storage area will also be constructed and hold cleaned equipment above grade. All downhole drilling tools, sampling tools, and well development materials will also be decontaminated and stored as cleaned in a designated storage area above grade prior to entering or re-entering the borehole.

In general, all decontamination and storage of drilling and sampling equipment will be done on stages (i.e., pallets) that have been designed and constructed for that purpose.



Soil samples will be taken at 5-foot intervals using a split-spoon sampler during the drilling operations. The sampling device will be decontaminated prior to each use. Additional samples will be collected where changes in lithology occur or where deemed necessary by the supervising geologist. Specifically, when obtaining soil boring samples, the following protocol will be followed:

1. Assemble the sampler by aligning both sides of barrel and then screwing the bit on the bottom and the heavier headpiece on top.
2. Place the sampler in a perpendicular position on the material to be sampled.
3. Drive the tube utilizing a drilling rig.
4. Record the length of the tube that penetrated the material being sampled and the number of blows required to obtain this depth.
5. Withdraw the sampler and open by unscrewing bit and head and splitting barrel.
6. Each split spoon sample will be screened with a photoionization detector (PID) upon opening the spoon. Then a clean, stainless steel knife will be utilized to divide the tube contents in half longitudinally.
7. Place the soil in the sample container. This soil is described by the field geologist. The

sample will be retained at H2M. Certain samples will be selected for grain size analysis by an independent soil testing lab.

8. The sample will be capped with aluminum foil. This sample will be heated for approximately two minutes with a portable sterno stove.
9. The sample will be tested with a PID by inserting the probe through the foil cap. The PID reading will then be recorded.
10. Record all pertinent data in the field notebook.

Grain size analyses will be conducted for selected samples from the proposed well screen area in the borehole. Based upon the grain size analysis and field observations, site-specific hydraulic conductivity will be estimated and geologic cross sections will be constructed. This information will be incorporated into the text of the final report.

In order to assist in the determination of the subsurface aquifer properties, a down-hole geophysical investigation will be performed in the borehole of wells MW-7 and MW-6 (deep well of the couplet). This method will provide confirmatory information on soil types and the presence of any confining layers. The investigation will consist of electrical resistivity, gamma and S.P. Borehole logging.



## 2.2 - GROUNDWATER MONITORING WELL SURVEY

A leveling survey establishing land surface elevations (to the nearest 0.1 foot) and top of the casing elevations (to the nearest 0.01 foot) at all measuring points, as well as relative locations of all monitoring wells, will be conducted. Water level monitoring will then commence at the two (2) newly installed wells and five (5) existing on-site wells.

## 2.3 - GROUNDWATER MONITORING PROGRAM

Water levels will be obtained just prior to sampling of the wells and again approximately two (2) weeks later. Thereafter, water level data from the deep wells will be collected in conjunction with the water table wells on a monthly basis for a year.

In conjunction with the data from the deep on-site well and the USEPA wells at the Syosset landfill, we will develop a series of three-dimensional flow nets, in combination with site-specific geologic cross sections.

During each visit, the water levels in the wells will be measured using a water sensitive probe. The water level data will then be used to develop water table contour maps, determine groundwater flow direction, and calculate the hydraulic gradient for the site and vicinity. Water table contour maps from August 1987 through April 1988 are presented in Figures 2-9.

A hydraulic conductivity analysis will also be conducted utilizing the recovery or slug test method during one of the regular site visits after the scheduled water level survey. The results of this analysis coupled with the water leveling data will be used to calculate the seepage velocity by using Darcy's Law.

Groundwater samples from all seven (7) on-site monitoring wells will be collected and each of the water samples will be submitted for full TCL-CLP analysis, as well as TOX, cyanide and leachate indicators. Samples will be unfiltered. The leachate indicator parameters are ammonia, chloride, fluoride, nitrate, sulfate, suspended solids, total dissolved solids and hardness. Field and trip blanks will only be analyzed for TCL volatile organics. The analysis will identify the nature and probable extent of groundwater contamination, if present. Table 1 lists these parameters with associated analytical method, sample preservation method, holding time and sample container.

The methods to be utilized to collect the groundwater samples are outlined below:

1. Slit a piece of 4 x 4 foot plastic in the center and place the opening over the well. All sampling will be conducted on the plastic.
2. Utilizing a pre-cleaned dedicated stainless steel bailer, and 5-foot stainless steel chain (leader), attach new polypropylene line to the end of the chain leader.
3. Bail well a minimum of 3 well volumes, or until well runs dry.



**TABLE 1**  
**METHODS FOR GROUNDWATER SAMPLE ANALYSIS**

PARAMETERS =====	METHOD REFERENCE =====	SAMPLE PRESERVATION =====	HOLDING TIME =====	CONTAINER =====
TCL Volatile Organics	CLP SGW 7/87	Add .008% Na2S2O3 Only if Residual	w/in 7 Days	(2) 40 ml Glass Vials w/ Teflon Lined Caps
TCL Semivolatile Organics	CLP SGW 7/87	Cool, 4°C  Chlorine Present	Extract w/in 5 days Analyze w/in 40 days	1 liter glass bottle w/teflon lined caps
TOX	EPA 1979 #450.1	pH<2 w/HCl, 4°C	7 Days	Glass Bottle w/ Teflon Lined Cap
Cyanide (total)	CLP SGW 7/87	NaOH, pH > 12, 4°C	14 Days	1 liter Plastic
TCL Metals:				
Al, Aluminum	EPA 1979 #202,40CFR136 ICP 200.7	HNO3 pH < 2	6 Months	500 ml Plastic
Sb, Antimony	EPA 1979 #204,40CFR136 ICP 200.7	do.	do.	do.
As, Arsenic	EPA 1979 #206,40CFR136 ICP 200.7	do.	do.	do.
Ba, Barium	EPA 1979 #206,40CFR136 ICP 200.7	do.	do.	do.
Be, Beryllium	EPA 1979 #210,40CFR136 ICP 200.7	do.	do.	do.
Cd, Cadmium	EPA 1979 #213,40CFR136 ICP 200.7	do.	do.	do.
Ca, Calcium	EPA 1979 #215,40CFR136 ICP 200.7	do.	do.	do.
Cr, Chromium	EPA 1979 #281,40CFR136 ICP 200.7	do.	do.	do.
Co, Cobalt	EPA 1979 #219,40CFR136 ICP 200.7	do.	do.	do.
Cu, Copper	EPA 1979 #220,40CFR136 ICP 200.7	do.	do.	do.
Fe, Iron	EPA 1979 #236,40CFR136 ICP 200.7	do.	do.	do.
Pb, Lead	EPA 1979 #239,40CFR136 ICP 200.7	do.	do.	do.
Mg, Magnesium	EPA 1979 #242,40CFR136 ICP 200.7	do.	do.	do.
Mn, Manganese	EPA 1979 #243,40CFR136 ICP 200.7	do.	do.	do.
Hg, Mercury	EPA 1979 #245.1	do.	14/28 Days	Plastic/Glass
Ni, Nickel	EPA 1979 #249,40CFR136 ICP 200.7	do.	6 Months	500 ml Plastic
K, Potassium	EPA 1979 #258,40CFR136 ICP 200.7	do.	do.	do.
Se, Selenium	EPA 1979 #270,40CFR136 ICP 200.7	do.	do.	do.
Ag, Silver	EPA 1979 #272,40CFR136 ICP 200.7	do.	do.	do.
Na, Sodium	EPA 1979 #273,40CFR136 ICP 200.7	do.	do.	do.
Th, Thallium	EPA 1979 #279,40CFR136 ICP 200.7	do.	do.	do.
Zn, Zinc	EPA 1979 #289,40CFR136 ICP 200.7	do.	do.	do.
Leachate Indicator Compounds:				
NH3, Ammonia	EPA 1979 #350.1	H2SO4, pH<2, 4°C	28 Days	1 Liter plastic
Cl, Chloride	EPA 1979 #325.2	4°C	28 Days	do.
F, Fluoride	EPA 1979 #340	None	28 Days	do.
NO3, Nitrate	EPA 1979 #353.2	4°C	48 Hours	do.
SO4, Sulfate	EPA 1979 #375	4°C	28 Days	do.
Suspended Solids	209B STD METHODS			
Total Dissolved Solids	209B STD METHODS			
Hardness	EPA 1979 #130		48 Hours	do.

4. Discharge the purged water a few feet downgradient of each well location.
5. Following the required purging, field parameters for pH, temperature and conductivity will be measured.
6. Begin to sample.

Stainless steel dedicated bailers will be utilized to collect the groundwater samples. The bailers and all field sampling equipment will be laboratory cleaned, wrapped and dedicated to a particular sampling point. Samplers will be cleaned and prepared for field use according to the following procedures:

1. Non-phosphate detergent and tap water wash.
2. Tap water rinse.
3. Distilled/deionized water rinse.
- ✓ 4. Methanol rinse. Acetone will not be used, since it is a contaminant identified at the site.
5. Distilled/deionized water rinse.
6. Total air dry.
7. Distilled/deionized water rinse.

After this procedure has been accomplished, the sampling device will be wrapped in cleaned and autoclaved aluminum foil (split spoon soil samplers will not be wrapped and cleaned in foil). A record will be kept of the technician performing the procedure as well as the date and time. The sampling equipment will remain in its wrapping until ready to use.



#### 2.4 - REPORT

Upon receipt of the laboratory analytical results, H2M will evaluate the data and prepare a Hydrogeologic Investigation Report. The report will present raw data including well logs, field notes and observations, as well as present and evaluate the analytical data in terms of defining the extent of soil and groundwater contamination, if present.

If H2M finds significant groundwater contamination on-site which may migrate and have a significant adverse impact on the environment, H2M will make recommendations for additional investigations.

#### 2.5 - SCHEDULE

Table 2 provides a detailed schedule for the implementation of the investigation. The investigation will be completed within 120 days after the New York State Department of Environmental Conservation (NYSDEC) approval of the work plan. No field work will be performed until these plans have been reviewed and approved by the NYSDEC.

A total of two weeks has been allocated for NYSDEC review of H2M's submissions. If more time is required for NYSDEC review, the schedule will be adjusted to accommodate the required review time. The remaining portion of the schedule will comply with the completion dates contained in the order on consent starting on the date the NYSDEC issues a notice to proceed.

TABLE 2  
PROJECT SCHEDULE

<u>WEEKS FROM APPROVAL OF WORK PLAN</u>	<u>TASK</u>
2	Well Installation
6	Well Survey
8	Groundwater Sampling and Hydrogeologic Testing
12	Laboratory Analysis
20	Report



**QA/QC  
PLAN**

QA/QC PLAN  
CERRO CONDUIT COMPANY  
SYOSSET, NEW YORK

APRIL 1988

1.0 - PURPOSE

The Quality Assurance/Quality Control (QA/QC) Plan specifies the sampling and laboratory analytical protocols to be used for these investigations at the Cerro Conduit site.

2.0 - PROTOCOLS

1. GENERAL INFORMATION

Site: Cerro Conduit Company  
Syosset, N.Y. Project No.: SYAS 88-01

Location: Robbins Lane &  
Miller Place Project Mgr: M. Tumulty, P.E.

Prepared by: K.F. Shanahan Date: 4/18/88

Approved by: M. Tumulty Date: 4/19/88

QA Officer: J.R. Holzmacher Client: David Swersky, Esq.

2. PROJECT DESCRIPTION

A Hydrogeologic Investigation to assess the extent of contamination that may be present in the soil and groundwater at the Cerro Conduit site.



3. PROJECTED SAMPLING PROGRAM  
(See Work Plan)

4. PROJECT ORGANIZATION/RESPONSIBILITY

FIELD OPERATIONS: Karen F. Shanahan - Project  
Hydrogeologist

SAMPLING QC: Paul W. Grosser, Ph.D., P.E.

LABORATORY ANALYSES/QC: Joann M. Slavin, H2M Labs, Inc.

DATA PROCESSING ACTIVITIES/QC: James R. Holzmacher

5. DATA QUALITY REQUIREMENTS AND ASSESSMENTS

H2M LABS, INC.

6. SAMPLING PROCEDURES

The monitoring wells will be constructed to NYSDEC standards. Shown in Figure 1 is a cross section of the proposed monitoring wells. The wells will extend 2 feet above ground surface. The following instruments will be used for the sampling of various media:

Subsurface Soils - Split spoons - field dedicated  
Groundwater - Dedicated stainless steel bailers

Dedicated sampling equipment will be laboratory cleaned with the exception of the split spoons (which will be field cleaned). Following is a list of decontamination procedures:

- Non-phosphate detergent and tap water wash.
- Tap water rinse.
- Distilled/deionized water rinse.
- 1% nitric acid rinse for carbon steel split spoons.\*
- 10% nitric acid rinse for stainless steel and glass samplers.\*
- Distilled/deionized water rinse.
- Methanol rinse.
- Total air dry or nitrogen blowout.
- Distilled/deionized water rinse.

\*Only if sample is to be analyzed for metals.

7. SAMPLE CUSTODY PROCEDURES

H2M Labs, Inc. QA/QC Procedure  
Full (External and Internal) Chain-of-Custody

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8. CALIBRATION PROCEDURES AND PREVENTIVE MAINTENANCE

H2M Labs, Inc. QA/QC Procedure

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9. DOCUMENTATION, DATA REDUCTION AND REPORTING

H2M Labs, Inc. QA/QC Procedure

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10. DATA VALIDATION

H2M Labs, Inc. QA/QC Procedure

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11. PERFORMANCE AND SYSTEM AUDITS

H2M Labs, Inc. QA/QC Procedure

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12. CORRECTIVE ACTION PROCEDURES

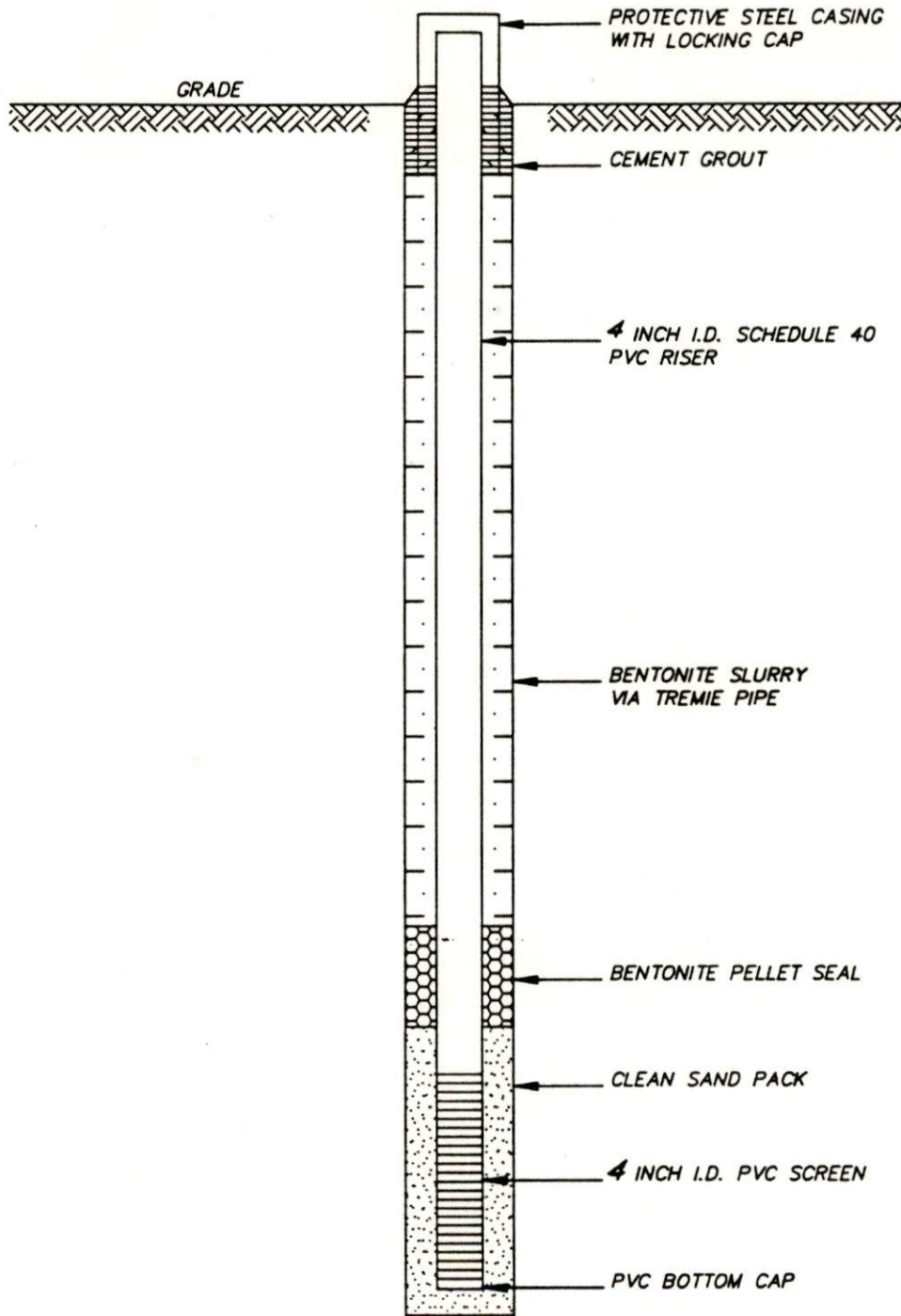
H2M Labs, Inc. QA/QC Procedure

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OVERBURDEN WELL  
SECTION VIEW  
(NO SCALE)