

February 24, 1994

Mr. Scott Seery
Alameda County Health Care Services
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

ALCO
HAZMAT
94 MAR -4 11:20

Subject: Site Closure Report for Stockel Property,
3234 Castro Valley Blvd., Castro Valley, CA

Dear Mr. Seery:

This Site Closure Report has been prepared to summarize the tank removal activities, site characterization investigations, and ground water monitoring performed at the project site located at 3234 Castro Valley Blvd. in the City of Castro Valley, in Alameda County, California (see Figure 1).

The site was the location of a former automotive repair facility and private residential units (see Figure 2) and has been re-developed as a Lyons Restaurant.

INTRODUCTION

One 657 gallon underground gasoline storage tank was located along the northern side of the former automotive shop (see Figure 2) and was removed on March 3, 1990 by KTW & Associates. Soil samples were obtained from the excavation by David C. Glick Associates personnel and were submitted for analytical testing for Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, and Xylene). Discolored soils were observed in the excavation during the tank removal and strong hydrocarbon vapors were emitted from the removed and in-situ soils. Several small holes (1/2" - 1" diameter) were observed in the lower half of the tank at each end.

SUBSURFACE INVESTIGATION

Sixteen (16) soil borings were advanced across the project site to a depths of 8 to 20 feet below the ground surface using an eight (8) inch, nominal diameter, continuous flight hollow stem auger at locations indicated on Figure 3. Five of the borings were converted to 2-inch monitoring wells upon completion as indicated on Figure 3. The borings which were not completed as monitoring wells were backfilled with an 11-sack sand slurry.

SUBSURFACE CONDITIONS

The soil borings and resulting tank excavations revealed that the soils in the vicinity of the former tank consist of a dark-gray, soft, silty clay to an approximate depth of 3 feet underlain by a mottled olive-orange, dense to firm, silty clay/clayey silt to a depth of 8 feet. The soil borings advanced for installation of the ground water monitoring wells encountered similar materials to a depth of 8 feet underlain by orange-brown silty sand and fine-grained sand to a depth of 23 feet (limits of exploration).

Ground water was encountered at depths of 8 feet below the ground surface and stabilized at a depth of 6 feet.

Gasoline and motor oil vapors were detected with the OVM and by noticeable odors in the soil samples obtained from the exploration borings and the analytical testing confirmed the presence of Total Petroleum Hydrocarbons as gasoline at concentrations from 560 - 11,000 parts per million.

Vapors were not detected by the OVM in the soil samples and the analytical testing did not detect gasoline compounds in the soil samples obtained from the monitoring well borings.

ADDITIONAL REMEDIAL ACTION

Subsequent to the tank removal and preliminary site investigation, the excavation was continued to a depth of 9 feet below existing grade and extended laterally to the limits defined by the soil borings by KTW & Associates personnel to further remove the fuel remaining contaminated soils. Figure 4 illustrates the approximate extent of the excavation which has been subsequently backfilled.

The excavated soil was stockpiled and remediated on-site by KTW & Associates through an enhanced soil aeration program and disposed of off-site at an appropriate landfill facility.

GROUND WATER MONITORING

The ground water monitoring wells were initially sampled in June, 1990 and then on a monthly basis from March, 1991 through September, 1991 by David C. Glick Associates and subsequently on a semiannual basis through October, 1992 by Geo Plexus, Incorporated. Table 1 summarizes the analytical test data.

TABLE 1

SUMMARY OF GROUND WATER ANALYTICAL TEST DATA

<u>Date Sampled</u>	<u>Total Petroleum Hydrocarbons</u> (ppb)	<u>Benzene</u> (ppb)	<u>Toluene</u> (ppb)	<u>Total Xylenes</u> (ppb)	<u>Ethyl-Benzene</u> (ppb)
<u>MW-1</u>					
6-4-90	ND	ND	ND	ND	ND
3-13-91	ND	ND	ND	ND	ND
4-30-91	ND	ND	ND	ND	ND
5-20-91	ND	ND	ND	ND	ND
6-18-91	ND	ND	ND	ND	ND
7-30-91	ND	ND	ND	ND	ND
8-29-91	ND	ND	ND	ND	ND
9-25-91	ND	ND	ND	ND	ND
6-10-92	ND	ND	ND	ND	ND
10-9-92	ND	ND	ND	ND	ND
<u>MW-2</u>					
6-4-90	ND	ND	ND	ND	ND
3-13-91	Destroyed				
<u>MW-3</u>					
6-4-90	ND	ND	ND	ND	ND
3-13-91	ND	ND	ND	ND	ND
4-30-91	--	--	--	--	--
5-20-91	--	--	--	--	--
6-18-91	ND	ND	ND	ND	ND
7-30-91	--	--	--	--	--
8-29-91	--	--	--	--	--
9-25-91	ND	ND	ND	ND	ND
6-10-92	ND	ND	ND	ND	ND
10-9-92	ND	ND	ND	ND	ND

TABLE 1 (continued)

SUMMARY OF GROUND WATER ANALYTICAL TEST DATA

<u>Date Sampled</u>	<u>Total Petroleum Hydrocarbons</u> (ppb)	<u>Benzene</u> (ppb)	<u>Toluene</u> (ppb)	<u>Total Xylenes</u> (ppb)	<u>Ethyl-Benzene</u> (ppb)
<u>MW-4</u>					
6-4-90	ND	ND	ND	ND	ND
3-13-91	ND	ND	ND	ND	ND
4-30-91	ND	ND	ND	ND	ND
5-20-91	ND	ND	ND	ND	ND
6-18-91	ND	ND	ND	ND	ND
7-30-91	ND	ND	ND	ND	ND
8-29-91	ND	ND	ND	ND	ND
9-25-91	ND	ND	ND	ND	ND
6-10-92	ND	ND	ND	ND	ND
10-9-92	ND	ND	ND	ND	ND
<u>MW-5</u>					
6-4-90	100	ND	ND	ND	ND
3-13-91	87	0.6	ND	ND	ND
4-30-91	120	0.6	ND	ND	ND
5-20-91	110	1.2	ND	ND	ND
6-18-91	74	ND	ND	ND	ND
7-30-91	86	ND	ND	ND	ND
8-29-91	54	ND	ND	ND	ND
9-25-91	ND	ND	ND	ND	ND
6-10-92	78	ND	ND	ND	ND
10-9-92	77	ND	ND	ND	ND

Notes:

Concentrations as reported on analytical testing reports.
 ND Indicates constituents not detected.
 Monitoring Well MW-3 was not sampled on monthly basis.

Monitoring Well MW-2 (the up-gradient well) was damaged during earthwork and paving for the Lyons Restaurant and parking lot and the traffic box and upper 2-feet of casing were encapsulated with concrete and buried.

GRADIENT SURVEY

The elevation of the top of the casing of the monitoring wells at the site were established during previous investigations (vertical control of 0.01 foot). Prior to purging the monitoring wells, the depth to ground water in each well was measured to the nearest 0.01 foot with an electronic water level meter.

Ground water elevations recorded suggest that the ground water flow across the site has consistently been in a southwesterly direction with Monitoring Wells MW-1, MW-4, and MW-5 located in the "down-gradient" direction from the former gasoline tank. Figures 5 through 14 indicate the recorded direction of flow and flow gradient for the site.

Ground water levels fluctuated during the monitoring period and ranged from 3.5-5 feet below the ground surface to 6-7 feet below the ground surface dependent on the time of year.

REGIONAL GEOLOGY AND HYDROLOGY

The project site is located within the Coast Ranges geomorphic province of California and is underlain by geologically recent alluvial sediments comprising the inner- and outer-margins of Quaternary age alluvial deposits. The alluvial deposits are composed of interbedded fine-grained sands, silts, and clays derived from the San Leandro Hills and deposited as river and flood plain deposits along ancestral stream channels. These alluvial water-bearing deposits extend to a reported depth of 50-80 feet within the vicinity of the project site and are underlain by nonwater-bearing clay-shales and fine-grained sandstone of the Panoche Formation.

Ground water resources in the vicinity of the project site have historically been limited to domestic water use, for which the demand has reduced with new commercial and residential developments and development of a public water system. Several domestic wells still exist throughout Castro Valley.

Ground water elevations recorded in the monitoring wells at the site suggest that the ground water has varied in depths ranging from 3.5 to 7 feet below the ground surface and has continued to flow across the site in a southwesterly direction (see Figures 3 through 8).

The project site is located approximately one mile northwest of the confluence of San Lorenzo Creek and Cull Creek. Two unnamed tributary streams (to San Lorenzo Creek) exist approximately one-half of a mile west and two-thirds of a mile east of the site, respectively.

The State of California Regional Water Quality Control Board reports that 23 sites have been identified within a one-half mile radius of the site which have reported releases from underground storage tanks and/or sumps which have impacted soil and ground water. Free product has been reported to exist at several sites. Ground water monitoring wells have been installed at most of these sites for characterization, monitoring, and remedial action purposes.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The subsurface investigation identified the limited vertical and lateral extent of the soil contamination resulting from the underground storage tank and the monitoring wells clearly identified that ground water was not impacted beyond the limits of the identified soil contamination. Ground water remediation has not been warranted, required, or performed at the site.

Based on our review of the project history, we have concluded that the remedial work performed to date including the tank removal and soil excavation resulted in: (1) removal of any potential existing/continued source of contamination; and (2) removal of any impacted soil which could contribute to continued ground water contamination.

The analytical testing indicate non-detectable quantities of Total Petroleum Hydrocarbons as gasoline and Volatile Aromatic Compounds (Benzene, Toluene, Ethyl Benzene, and Xylene) in Monitoring Wells MW-1, MW-2 (for initial test), MW-3 or MW-4.

Similarly, Volatile Aromatic Compounds (BTEX) were not detected in samples from Monitoring Well MW-5; although, low concentrations of petroleum hydrocarbons not indicative of gasoline were detected in Monitoring Well MW-5. It is noted that the analytical laboratory (Anametrix, Inc.) reported that the particular constituent reported as Total Petroleum Hydrocarbons as gasoline were not indicative of gasoline.

It is our opinion that the project site does not represent an environmental hazard or present an environmental risk to the ground water resources of the project site and surrounding area.

It is our recommendation that the site be approved for closure and that the existing ground water monitoring wells be destroyed by pressure grout techniques in accordance with Alameda County Well Destruction guidelines.

LIMITATIONS

We have only observed a small portion of the pertinent soil and ground water conditions present at the site. Subsurface conditions across the site have been extrapolated from information obtained from review of existing documents and from the field investigation. The conclusions made herein are based on the assumption that soil conditions do not deviate appreciably from those described in the reports and observed during the field investigation.

Geo Plexus, Incorporated provides consulting services in the fields of Geology and Engineering Geology performed in accordance with presently accepted professional practices. Professional judgments presented herein are based partly on information obtained from review of published documents, partly on evaluations of the technical information gathered, and partly on general experience in the fields of geology and engineering geology.

No attempt was made to verify the accuracy of the published information prepared by others used in preparation of this assessment report.

If you have questions regarding the findings, conclusions, or recommendations contained in this report, please contact us. We appreciate the opportunity to serve you.

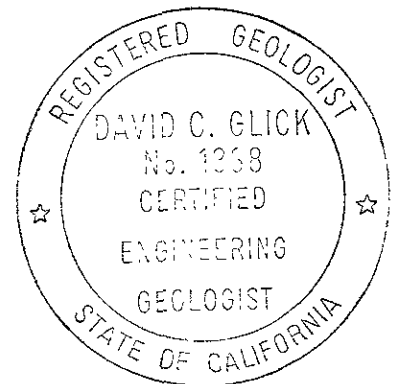
If you have questions regarding the information or recommendations contained in this report, please contact us.

Respectfully submitted,

Geo Plexus, Incorporated

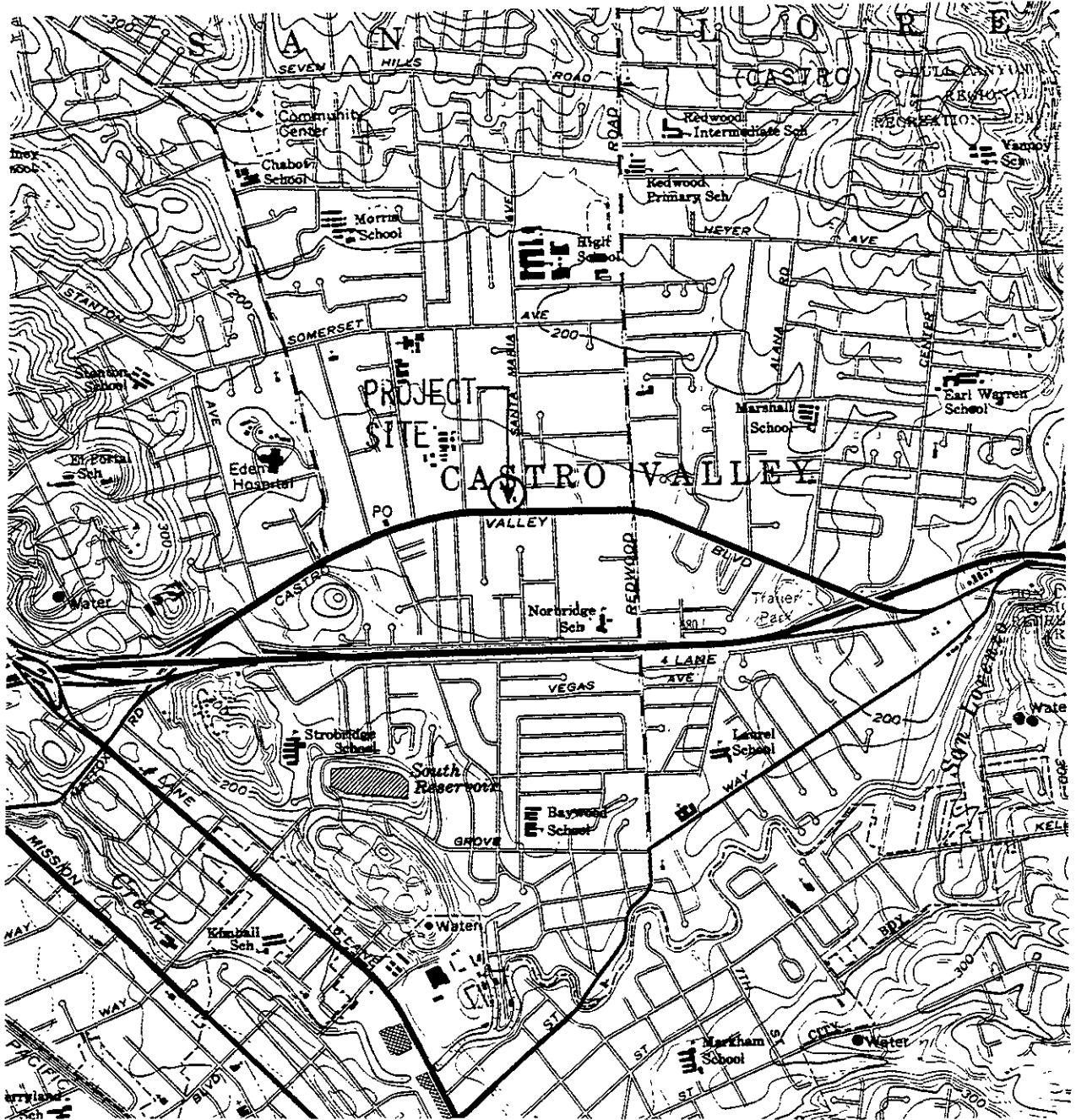


David C. Glick, CEG 1338
Director, Geological and
Environmental Services

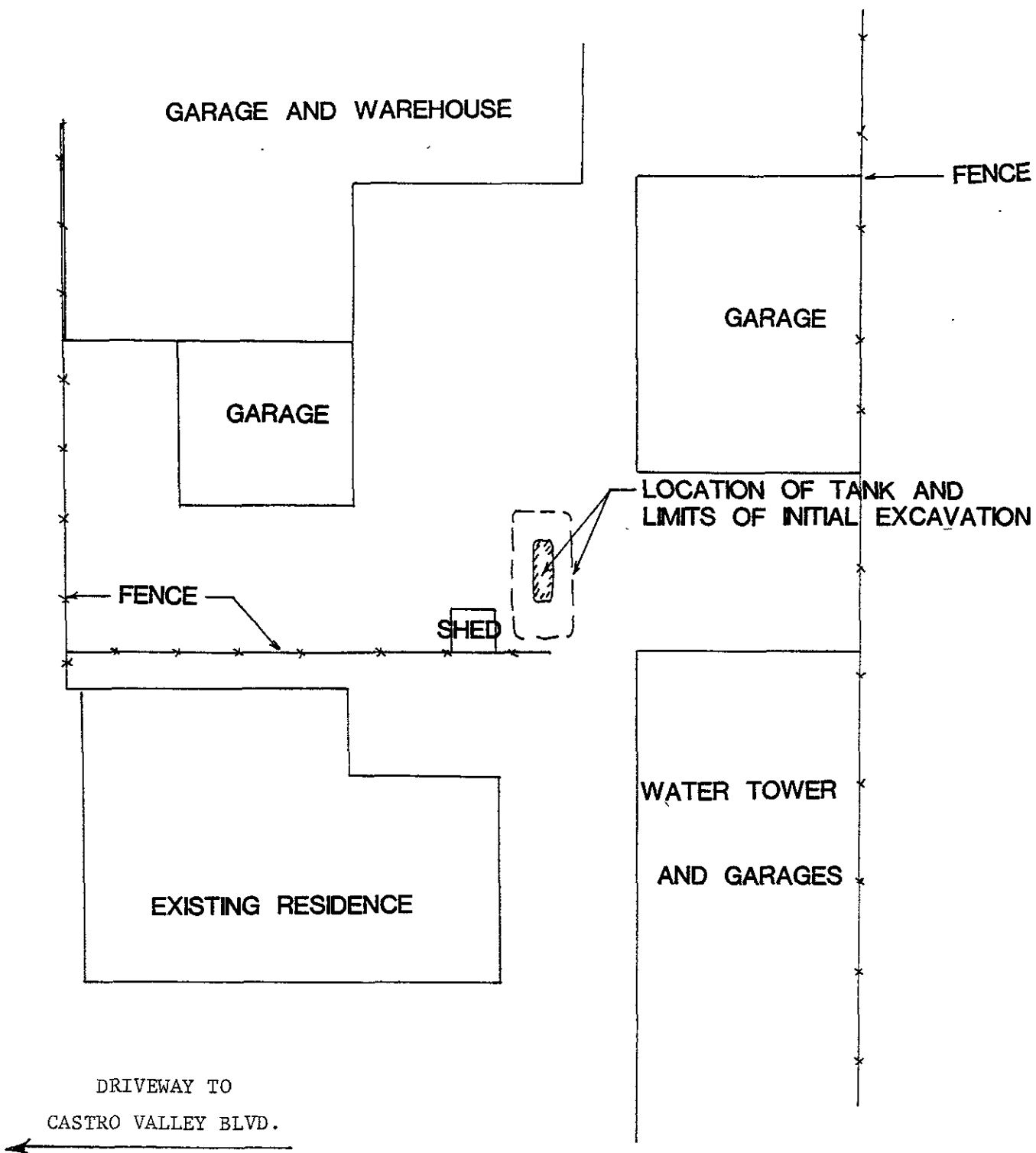


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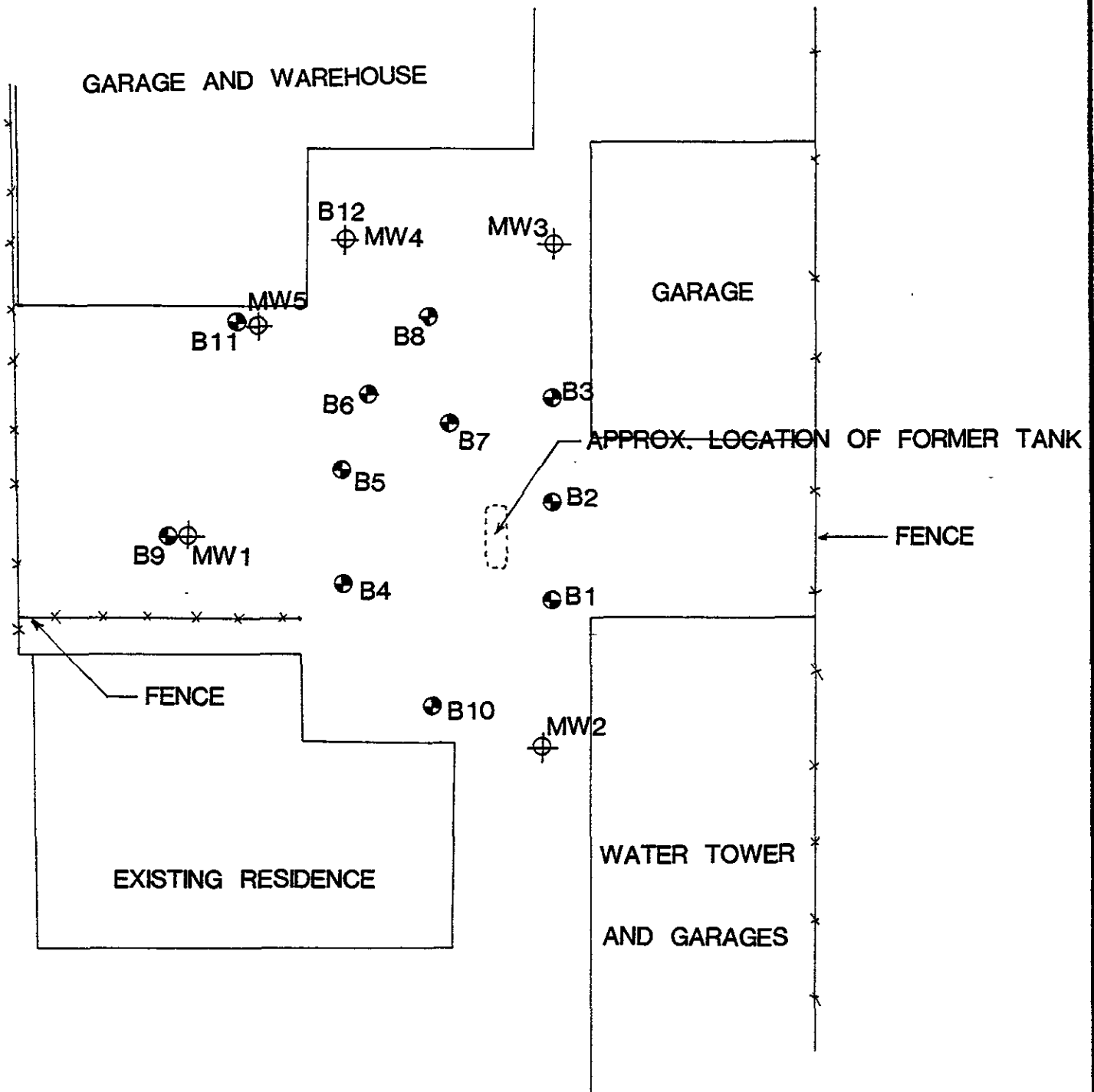
- (2) Copies Alameda County
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STOCKEL PROPERTY		
DATE	SCALE	DRAWN BY
2/24/94	n/a	dgc
VICINITY PLAN		
		Figure 1



DAVID C. GLICK ASSOCIATES		
DATE	SCALE	DRAWN BY
4-27-90	1" = 20'	D/G
SITE PLAN		
		Figure 2



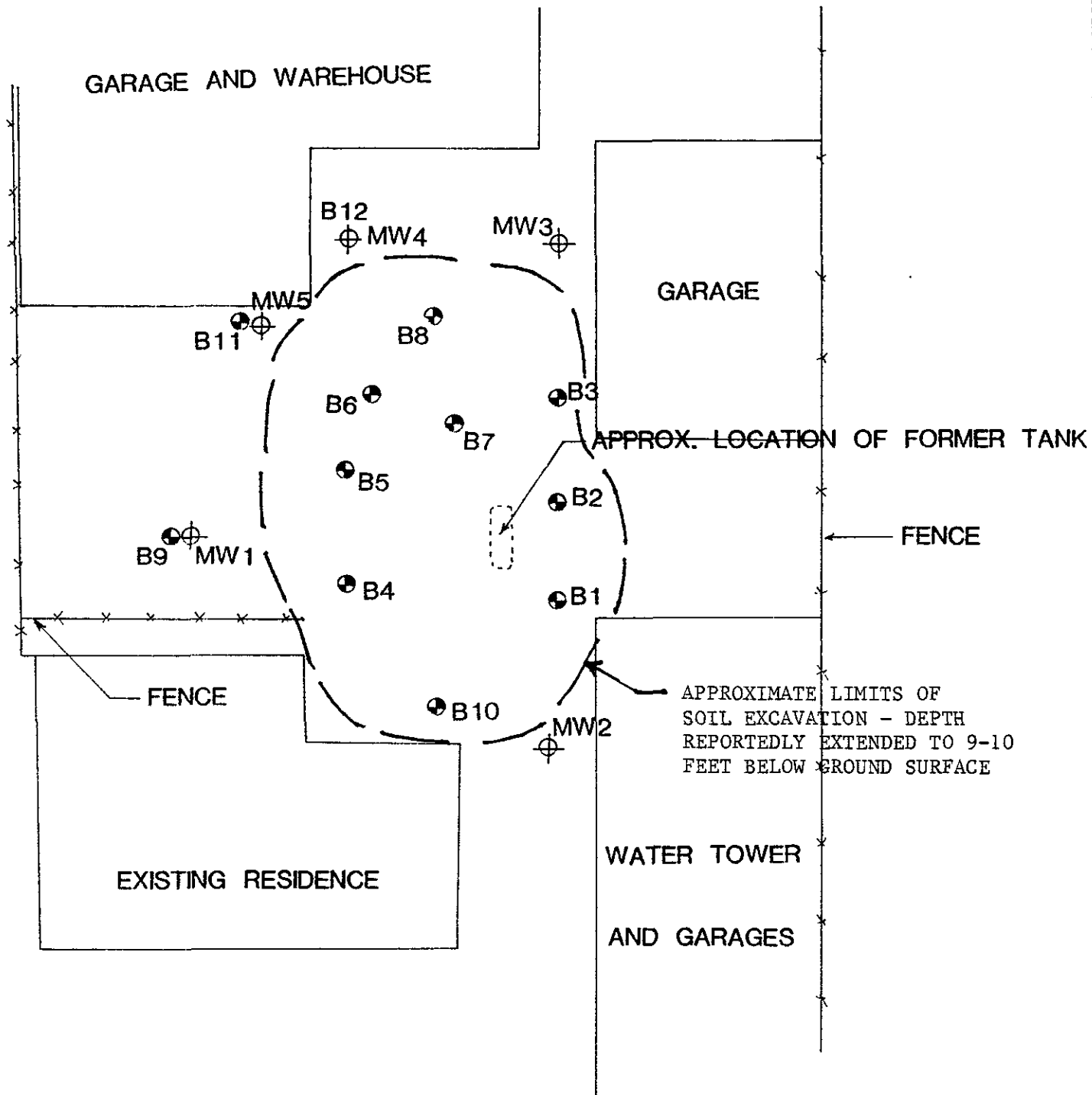
- SOIL BORING
- ⊕ MONITORING WELL

DAVID C. GLICK ASSOCIATES

DATE	SCALE	DRAWN BY
6-27-90	1" = 20'	DCG

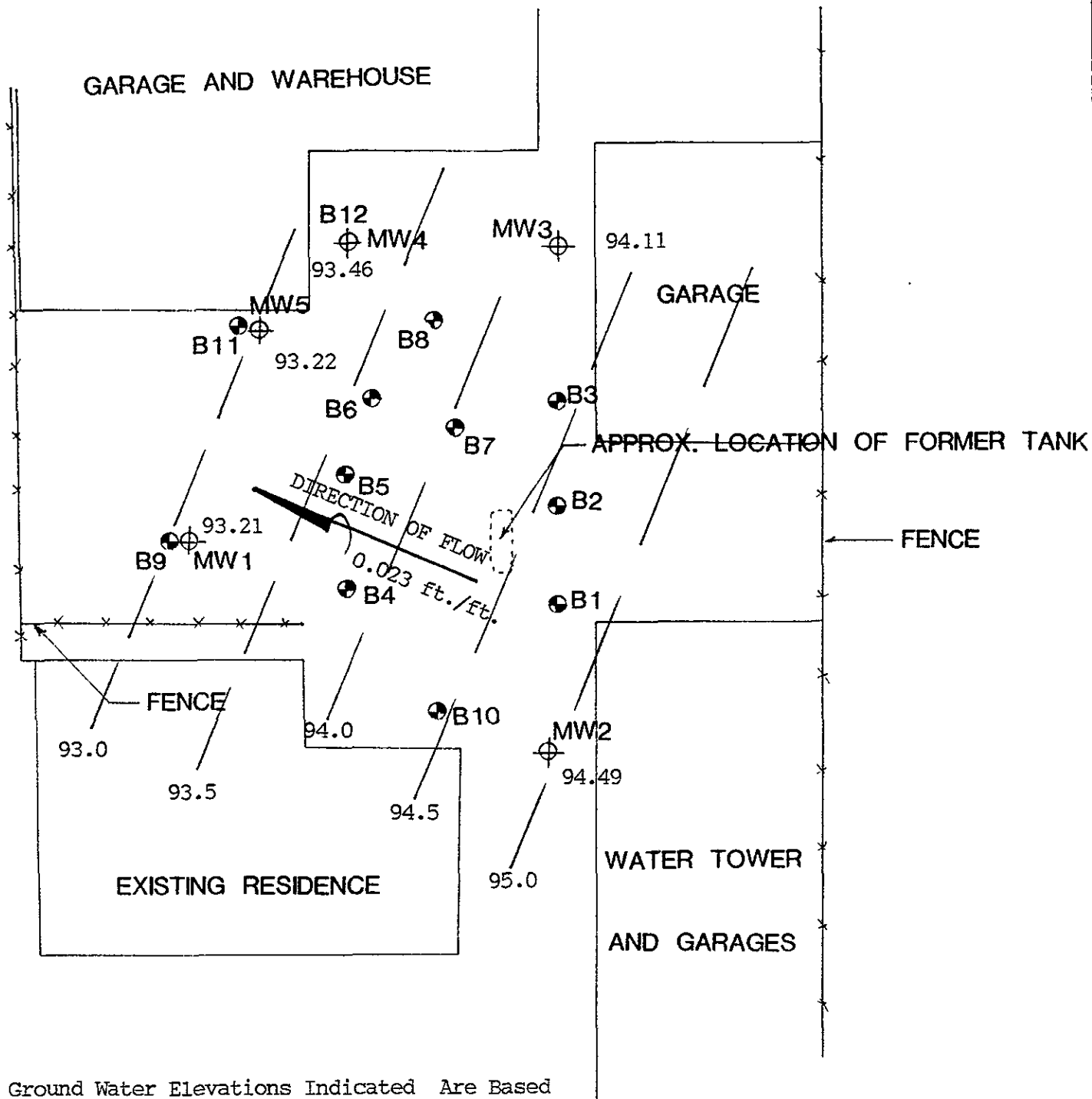
BORING LOCATION PLAN

Figure 3



- ⊙ SOIL BORING
- ⊕ MONITORING WELL

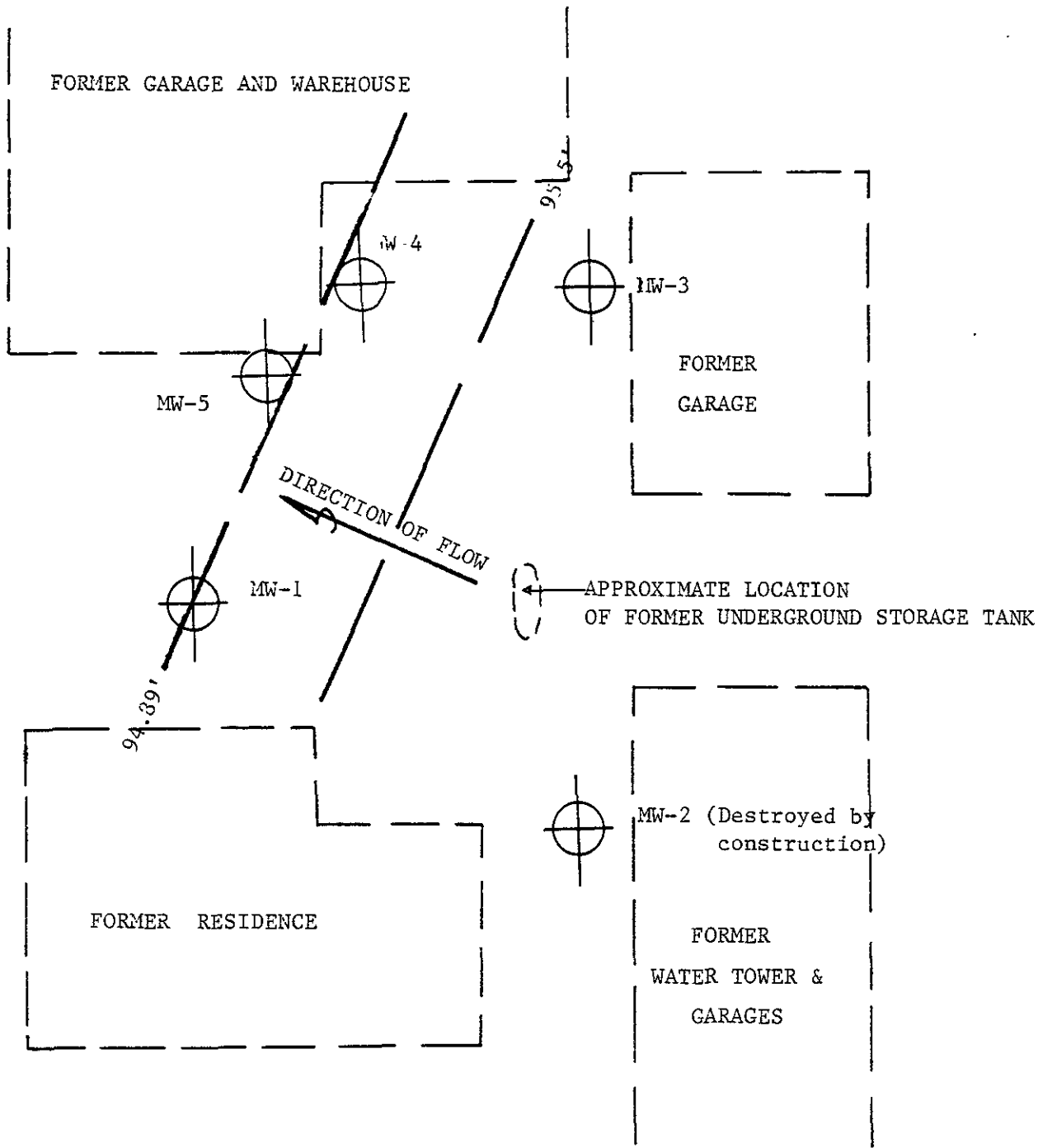
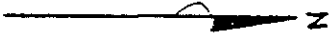
DAVID C. GLICK ASSOCIATES		
DATE 6-27-90	SCALE 1" = 20'	DRAWN BY DCG
SOIL EXCAVATION PLAN		
		Figure 4



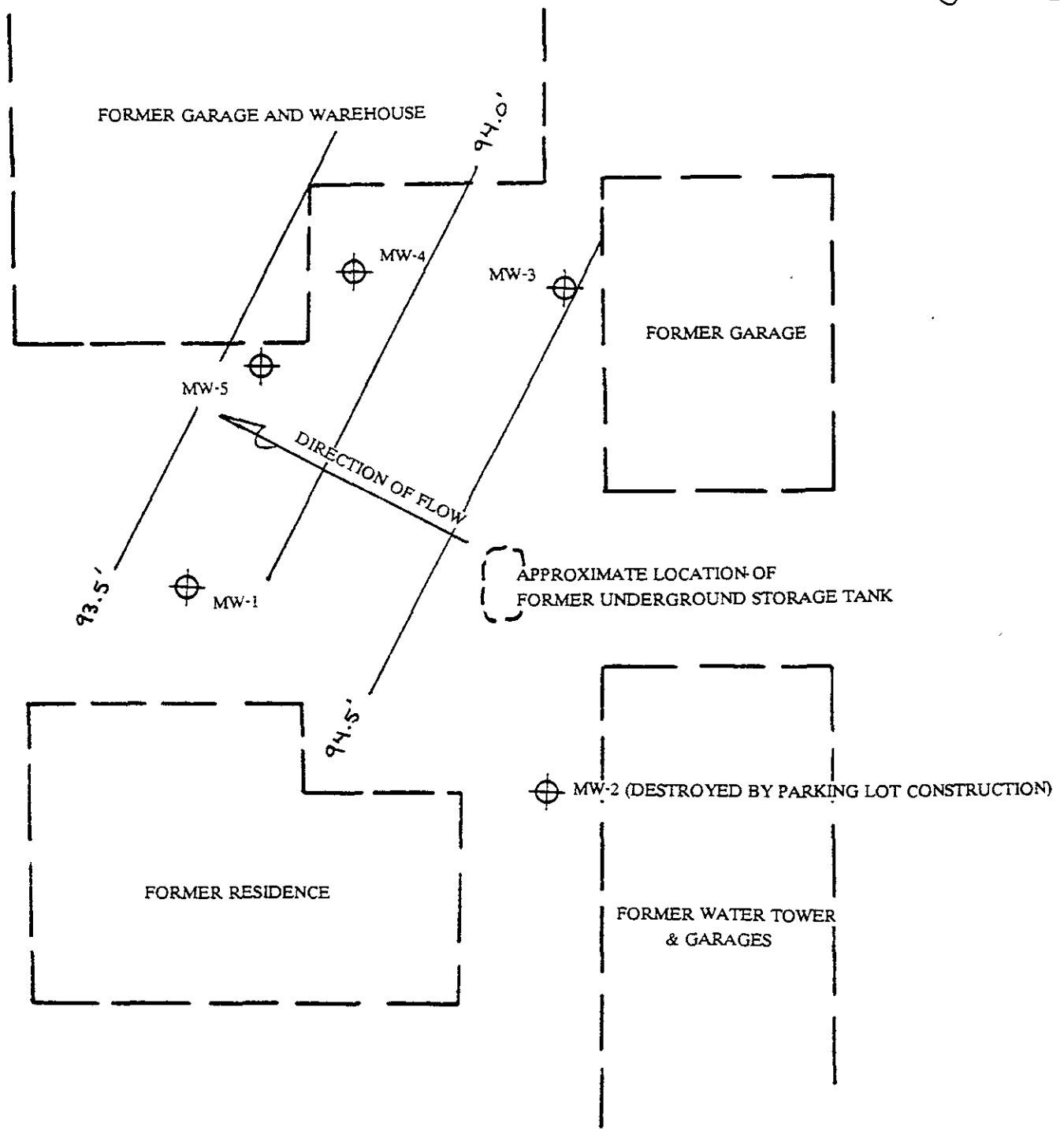
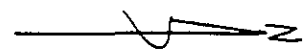
Ground Water Elevations Indicated Are Based On An Assumed Elevation of 100.00 Feet and An Temporary Bench Marck placed on the concrete floor slab in the garage adn warehouse.

- SOIL BORING
- ⊕ MONITORING WELL

DAVID C. GLICK ASSOCIATES		
DATE	SCALE	DRAWN BY
6-27-90	1" = 20'	DCG
GROUND WATER GRADIENT PLAN		
		Figure 5



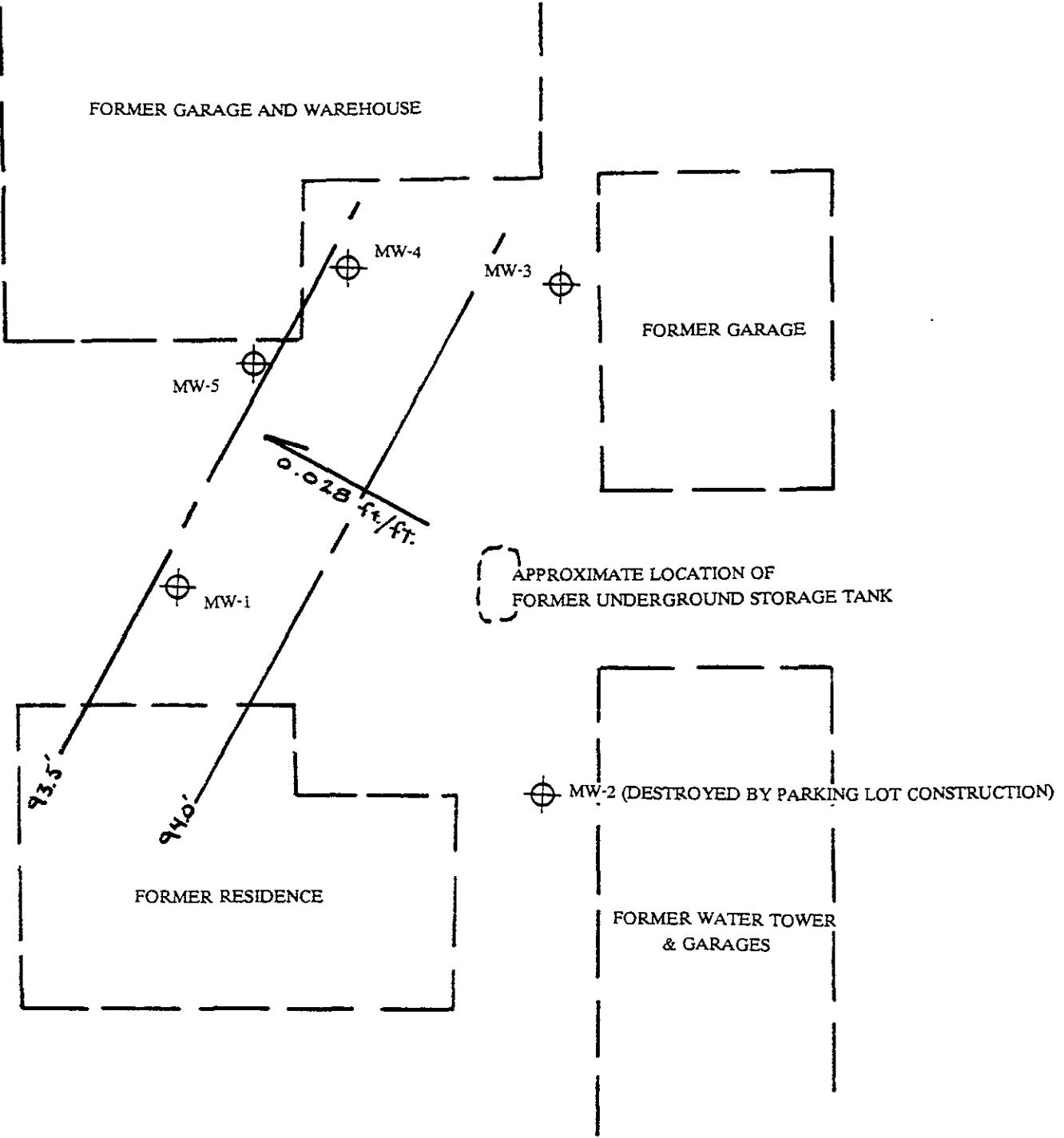
DAVID C. GLICK ASSOCIATES		
DATE 3-28-91	SCALE 1"=20'	DRAWN BY dcg
GROUND WATER GRADIENT PLAN		
STOCKEL	Figure 6	



GROUND WATER CONTOUR ELEVATIONS
BASED ON T.B.M. ASSUMED ELEVATION
OF 100.00 FEET

DEPTH TO GROUND WATER MEASURED
4-30-91

DAVID C. GLICK ASSOCIATES				
DATE	5-14-91	SCALE	1" = 20'	DRAWN BY
GROUND WATER GRADIENT PLAN				
STOCKEL			Figure 7	

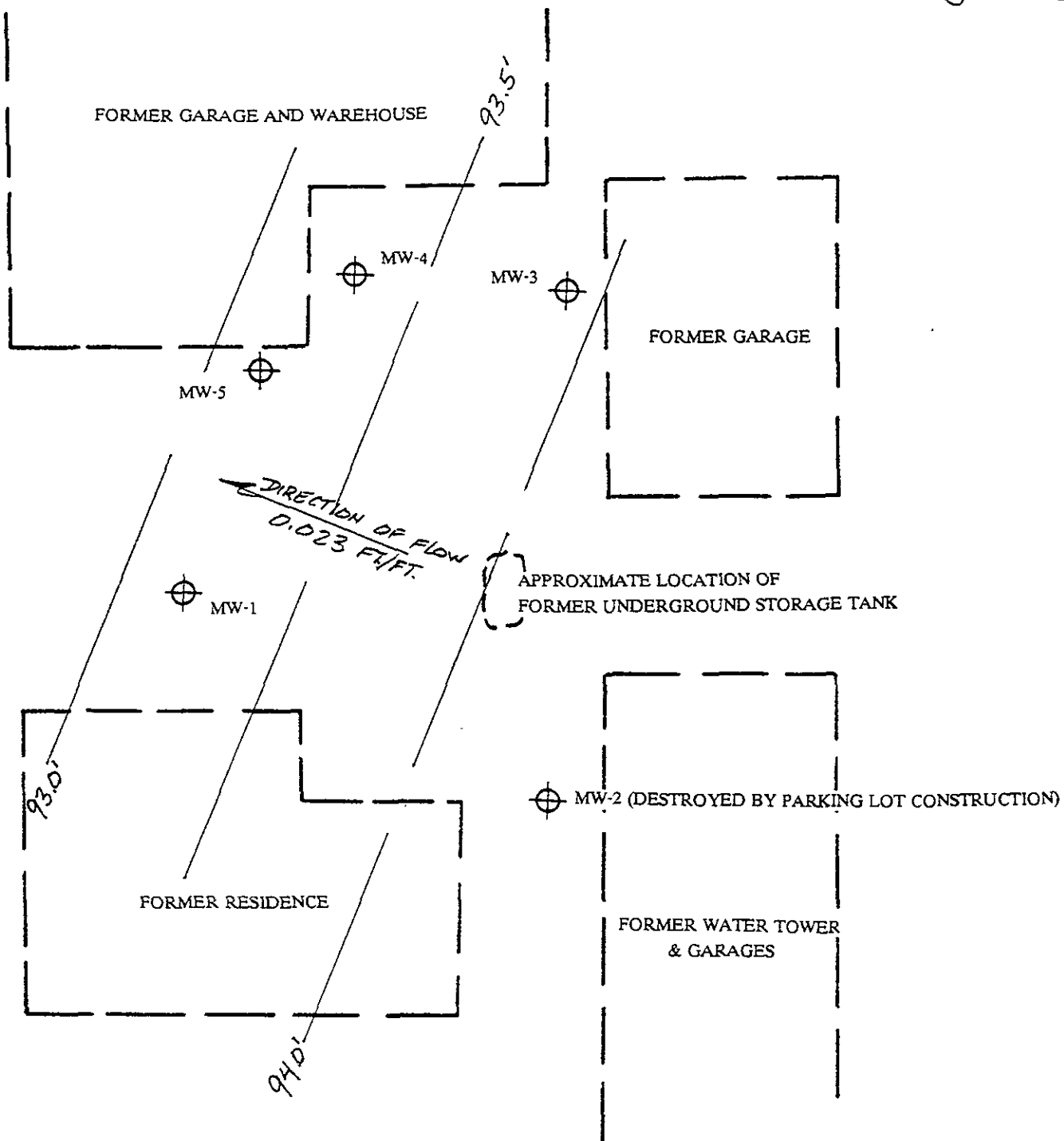
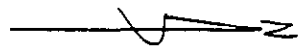


DAVID C. GLICK ASSOCIATES

DATE 6-10-91 SCALE 1" = 20' DRAWN BY

GROUND WATER GRADIENT PLAN

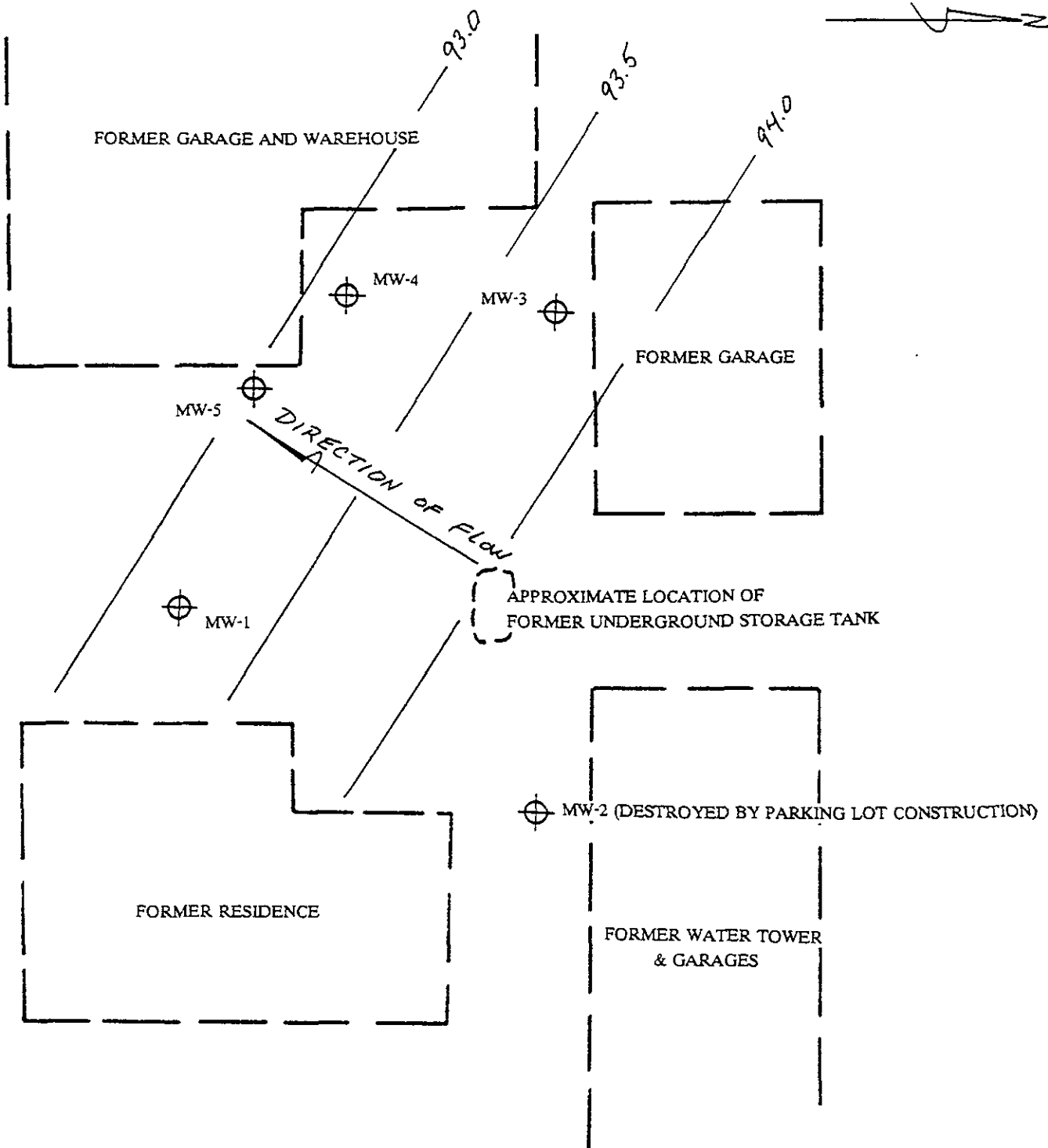
STOCKEL Figure 8



NOTE:
ELEVATIONS BASED ON TEMPORARY
BENCH MARK WITH ASSUMED
ELEVATION OF 100.00 FT.

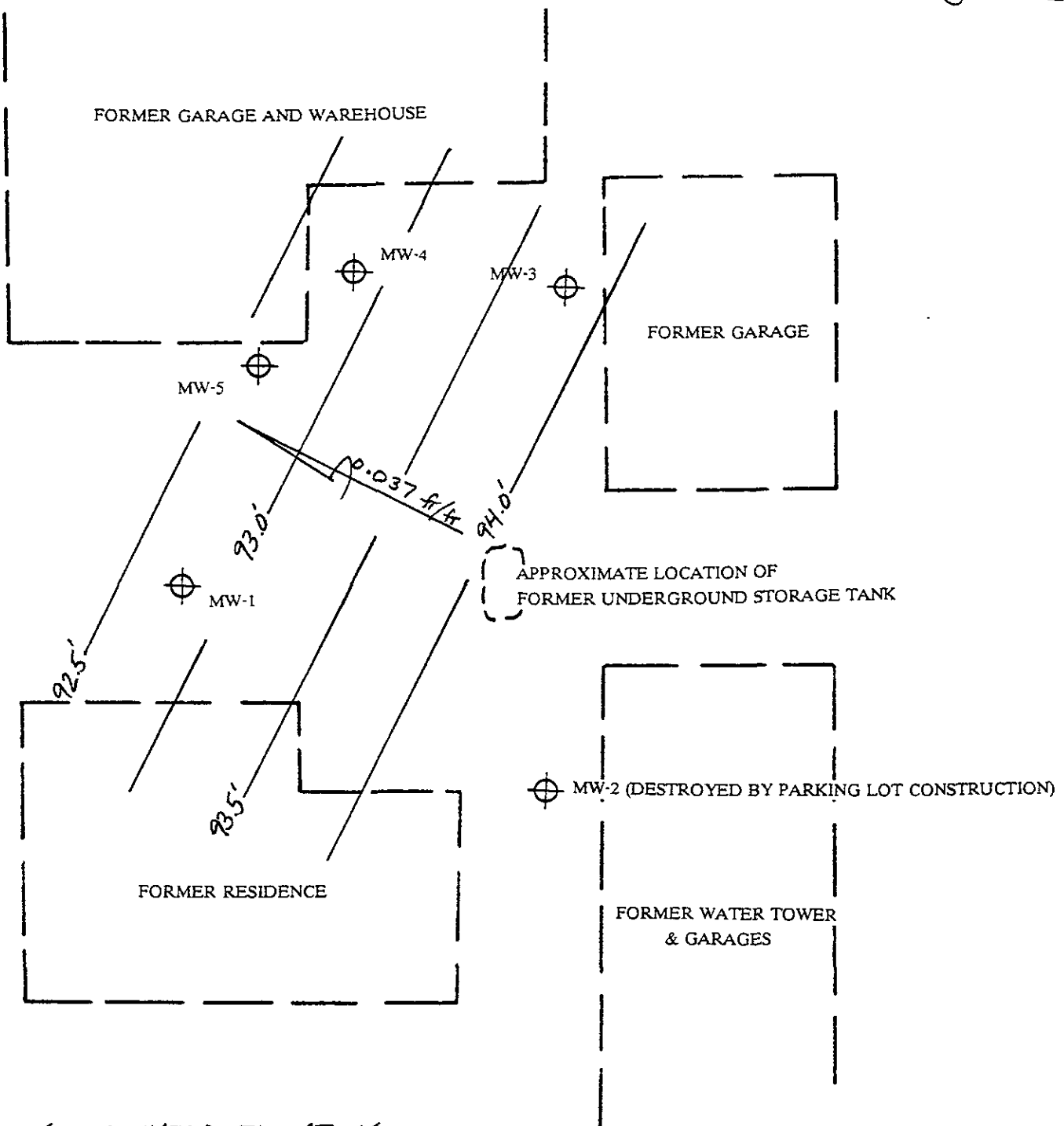
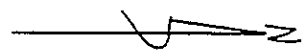
DEPTH TO WATER RECORDED 6-18-91

DAVID C. GLICK ASSOCIATES		
DATE	SCALE 1" = 20'	DRAWN BY
GROUND WATER GRADIENT PLAN		
STOCKEL	Figure 9	



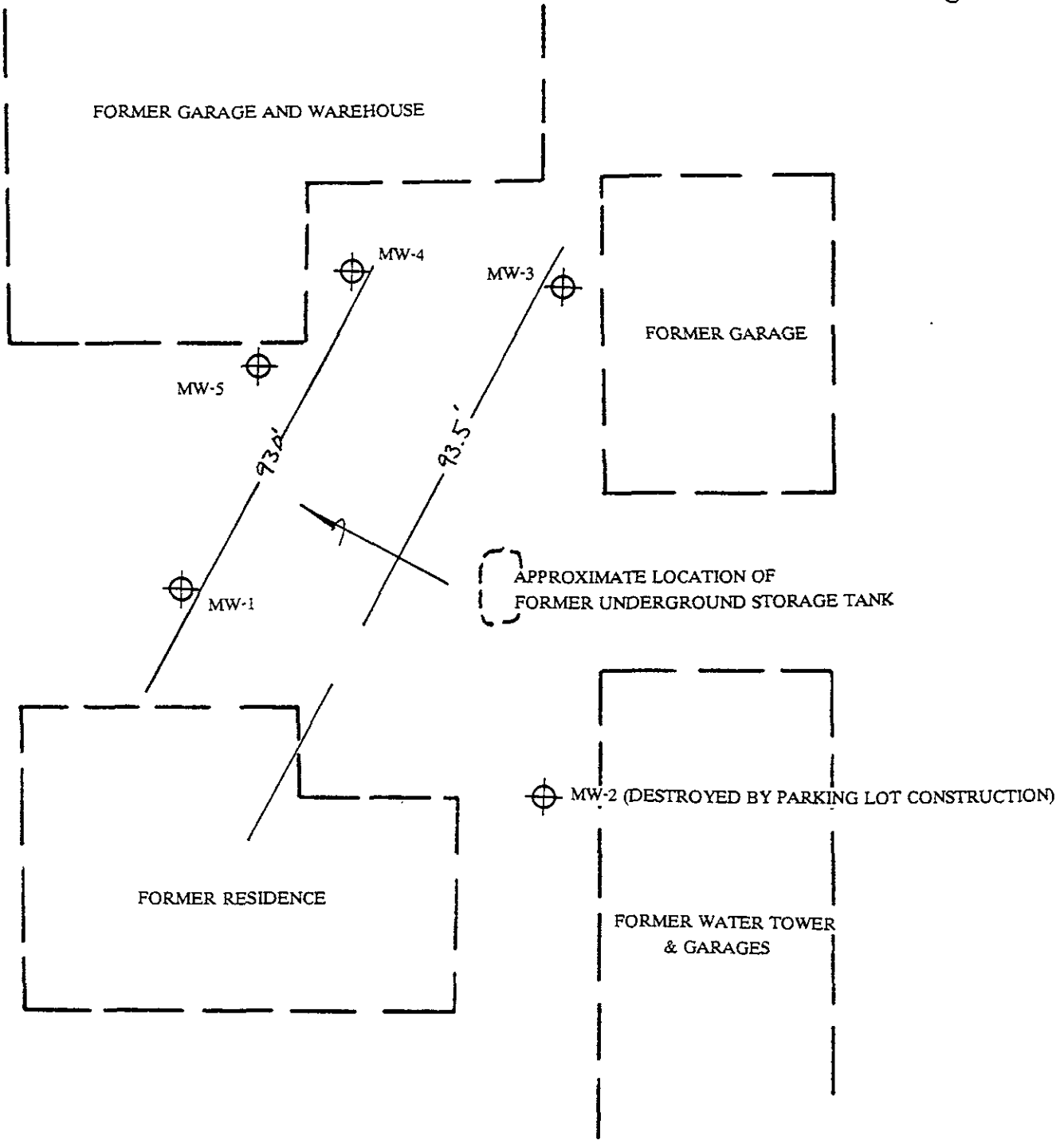
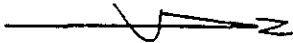
NOTE: ELEVATIONS BASED ON TEMPORARY BENCH MARK ELEVATION - ASSUMED 100.00 FEET MSL.

DAVID C. GLICK ASSOCIATES		
DATE 7-24-91	SCALE 1" = 20'	DRAWN BY DCG
GROUND WATER GRADIENT PLAN		
STOCKEL	Figure 10	

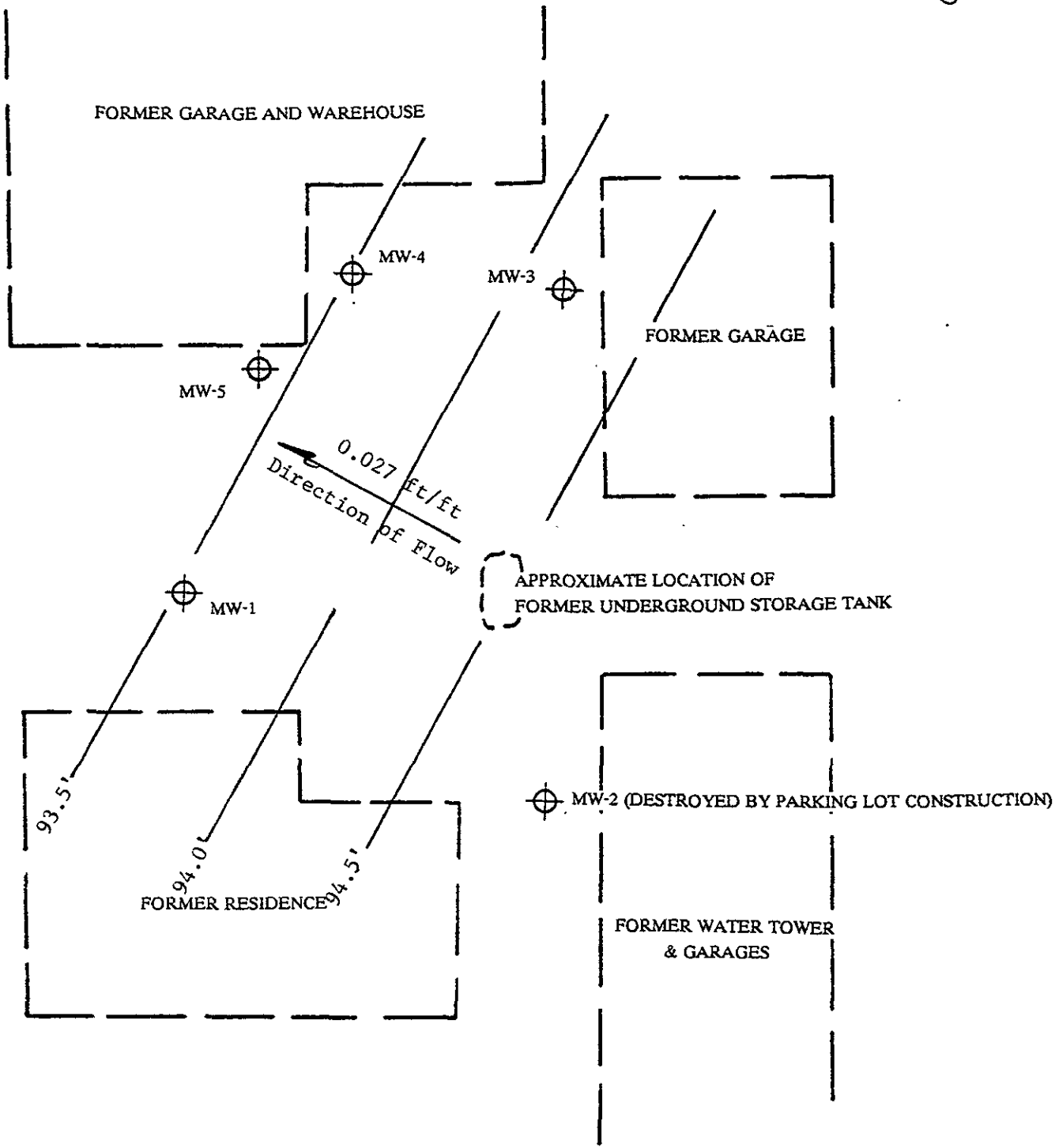
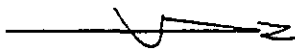


NOTE: GROUND WATER ELEVATIONS
BASED ON TBM WITH
ASSUMED ELEVATION OF 100.00'

DAVID C. GLICK ASSOCIATES		
DATE 8-29-91	SCALE 1" = 20'	DRAWN BY
GROUND WATER GRADIENT PLAN		
STOCKEL	Figure 11	

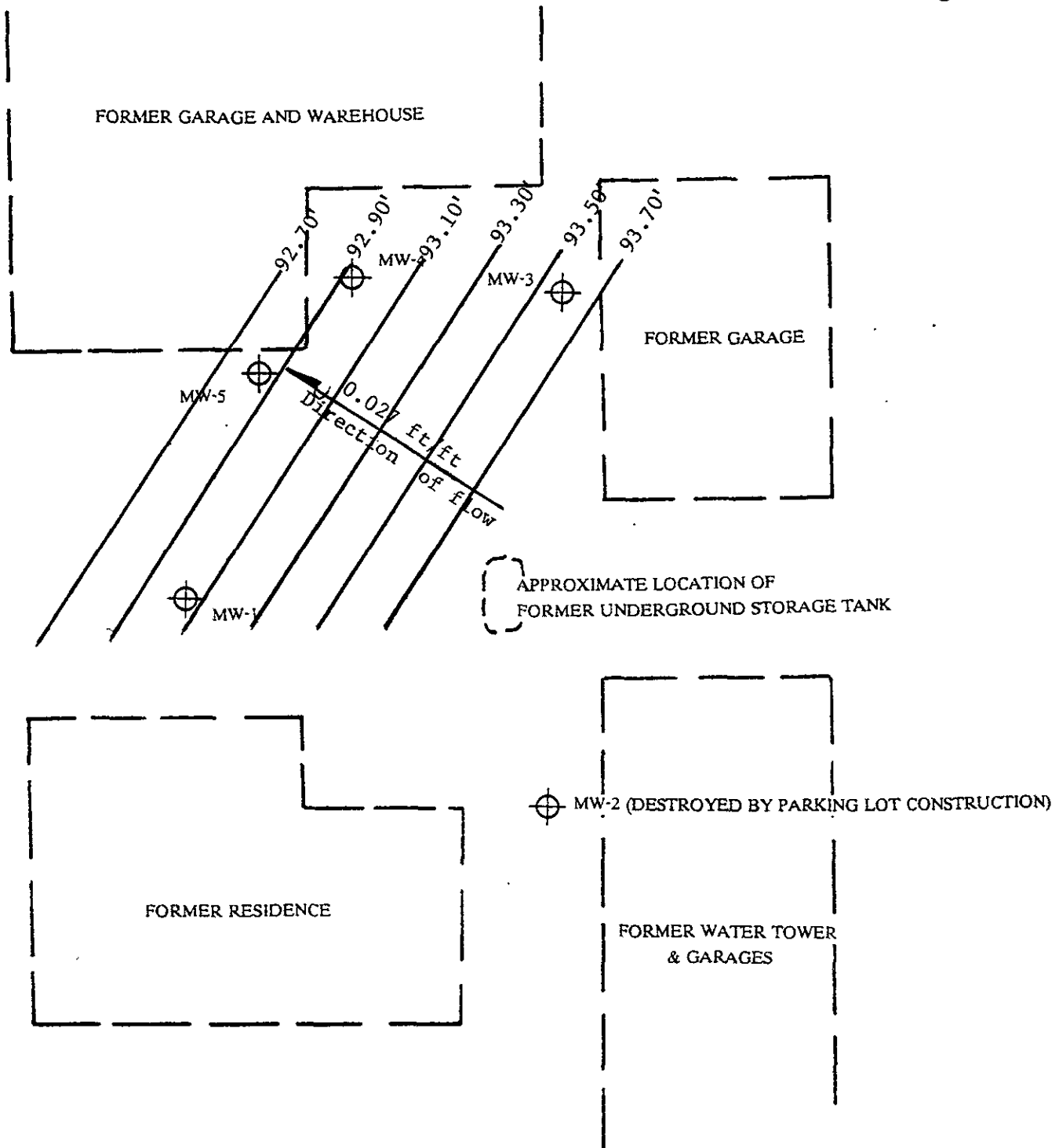
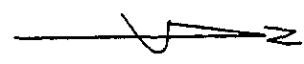


DAVID C. GLICK ASSOCIATES		
DATE 9-30-91	SCALE 1"=20'	DRAWN BY
GROUND WATER GRADIENT PLAN		
STOCKEL	Figure 12	



Note: Ground Water Elevations based on Temporary Bench Mark with an assumed elevation of 100.00 ft.

STOCKEL PROPERTY		
DATE 6-10-92	SCALE 1"=20'	CRAWN BY dcg
GROUND WATER GRADIENT PLAN		
STOCKEL	Figure 13	



STOCKEL PROPERTY			
DATE	SCALE	DRAWN BY	
10-9-92	1"=20'	deg	
GROUND WATER GRADIENT PLAN			
STOCKEL		Figure 14	