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Alameda County
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Engineering Division

AREA CONDUIT STUDY, AREA WELL SURVEY,
AND WORKPLAN
for
ADDITIONAL SOIL AND GROUNDWATER ASSESSMENT
at
Kozel Property
1001 42nd Street
Oakland, California

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1.0 INTRODUCTION

This submittal presents Aqua Science Engineers, Inc. (ASE)'s subsurface conduit study and workplan for an additional soil and groundwater assessment at the Kozel Property located at 1001 42nd Street in Oakland, California (Figures 1 and 2). Part of the subject property is also located in Emeryville, California as the city limit runs through the subject property. The site assessment activities were initiated by Mr. Edward Kozel of the Edward R. and Elizabeth A. Kozel Charitable Remainder Trust, owner of the property, as required by the Alameda County Health Care Services Agency (ACHCSA) in their letter dated April 2, 2004 (Appendix A).

2.0 BACKGROUND INFORMATION

The site was formerly owned by Boysen Paint Company, which ceased operation in the early 1980s, and was subsequently merged into the Ameritone Paint Corporation, a wholly owned subsidiary of the Grow Group. The site was purchased by Mr. and Mrs. Edward Kozel in 1981, and until recently was operated by Oakland National Engravers (ONE). A furniture restoration shop known as Rockridge Furniture Refinishing also previously occupied a portion of the property. The subject site is currently vacant.

2.1 Underground Storage Tank Removal from Beneath Loading Dock

In 1987, one 10,000-gallon underground storage tank (UST) used for the storage of mineral spirits was removed from beneath the truck loading dock on the 41st Street side of the property. Soil samples collected from beneath the UST at the time of the removal contained up to 43.5 parts per million (ppm) total petroleum hydrocarbons, 0.07 ppm benzene, 0.6 ppm toluene, and 17.6 ppm xylenes. Monitoring well MW-LD4 was also installed at this time. It is unknown how this well was constructed, although there has been speculation that this well may have been installed in the excavation pit.

2.2 Soil and Groundwater Assessment Of 41st Street UST

In 1987, O.H. Materials (OHM) began an investigation of an 8,000-gallon UST in the 41st Street sidewalk. This UST was previously used by Boysen Paint Company to store mineral spirits. A ground penetrating radar (GPR) was used to identify buried structures in the vicinity of the UST. Three underground utility lines were identified that would have been impacted by the removal of the UST.

In February 1988, OHM installed a temporary groundwater monitoring well adjacent to the UST and collected groundwater samples for analysis. Total petroleum hydrocarbons (TPH) were detected in the water samples at 610,000 parts per billion (ppb) and methylene chloride was detected at 720 ppb.

In May 1990, monitoring well MW-B1 was installed in the sidewalk on the west side of the UST. Groundwater samples collected from the monitoring well contained 57,000 ppb TPH and 11.4 ppb methylene chloride.

2.3 September 1991 Groundwater Sampling

In September 1991, Aqua Terra Technologies (ATT) collected groundwater samples from monitoring well MW-B1 (identified as MW-41st in their report) and MW-LD4. Groundwater samples collected from MW-B1 contained 18,000 ppb total purgeable petroleum hydrocarbons (TPPH), 29,000 ppb total petroleum hydrocarbons as kerosene (TPH-K), 5.6 ppb toluene, 250 ppb ethylbenzene, and 980 ppb total xylenes. The total dissolved solids content (TDS) was 526,000 ppb. No halogenated volatile organic compounds (HVOCs), including methylene chloride, were detected. The groundwater samples collected from MW-LD4 contained 2.0 ppb benzene, 3.1 ppb toluene, 9.0 ppb ethylbenzene, and 24 ppb total xylenes. The TDS in MW-LD4 was 695,000 ppb.

2.4 May 1993 UST Closure In-Place

In May 1993, Environmental Strategies Corporation (ESC) closed the 41st Street UST in-place. The sidewalk and fill were removed and the UST and piping were inspected prior to the closure. The tank piping contained holes and did not pass a pressure test. The UST, however, did pass a pressure test when it was isolated from the piping. During the excavation work, a product/water mixture that did not appear to be related to the UST was also found to be emanating from beneath the Rockridge Furniture Refinishing building at a depth of 2.5-feet below ground surface (bgs). A sample of this liquid was collected and labeled trench water. Approximately 25 tons of soil were excavated from above the tank and were disposed of off-site. Soil samples collected around the excavation pit and piping contained total extractable petroleum hydrocarbons (TEPH) up to 1.7 ppm and TPPH up to 0.74 ppm. The laboratory then identified the hydrocarbons as matching mineral spirits, although the samples were not quantified using the mineral spirit standard. The only VOC detected

was xylenes at concentrations up to 0.8 ppm. A total of 39 cubic yards of cement slurry was used to fill the void of the UST. The trench water sample contained 24,000 ppb TPPH, 12,000 ppb TEPH, and 380 ppb total xylenes. A soil sample was also collected from the sump area. This sample contained 10 ppm TEPH, 130 ppm TPPH, 1 ppm toluene, 1.3 ppm ethylbenzene, and 7.9 ppm total xylenes.

2.5 May 1993 Monitoring Well Installation

In May 1993, ESC installed monitoring wells MW-B2, MW-B3 and MW-B4 in 41st Street. The site wells were sampled in June and September 1993. Groundwater samples collected in September 1993 contained total petroleum hydrocarbons as mineral spirits (TPH-MS) at 290,000 ppb in MW-B2 and 43,000 ppb in MW-B1. The remaining wells contained TPH-MS at concentrations between 700 and 2,400 ppb. No VOCs were detected during either sampling.

2.6 Concrete Sump Closure and Monitoring Well Installation

The site previously contained two steel-lined concrete sumps. These sumps were apparently used by Rockridge Furniture Refinishing in conjunction with their furniture stripping operation. Solvents used for the stripping of furniture contain methylene chloride. In May 1993, ESC collected a sample of the sludge in the bottom of the sump. This sample contained 130 ppm total petroleum hydrocarbons, 1.1 ppm toluene, 1.4 ppm ethylbenzene, 14 ppm total xylenes, 0.46 ppm trichloroethene (TCE) and 17 ppm methylene chloride. Liquid in the sump on August 1993 contained 79,000 ppb methylene chloride, 12,000 ppb TCE and trace concentrations of 1,2-dichloroethylene (DCE). This liquid, approximately 110 gallons, was removed from the site.

In 1994, Block Environment Services (BES) drilled a boring adjacent to the sump and installed monitoring well BES-1 in the boring. Soil samples were collected from the boring at depths of 3 and 8-feet bgs. TCE was detected in the soil sample collected from 3-feet bgs at 0.0095 ppm and in the sample collected from 8-feet bgs at 0.013 ppm. No methylene chloride was detected in either soil or groundwater samples from this boring/well, and no TCE was detected in groundwater samples collected from this well.

2.7 Neutralization Room UST Closure In-Place

A 300-gallon UST was discovered in the neutralization room along the eastern wall of the facility in November 1994. The tank location was

pinpointed using GPR. No piping was discovered associated with the UST. Due to the UST's location adjacent to the north building wall, the UST could not be safely removed and it was therefore closed in-place. The liquid contents of the UST were sampled and analyzed for pH, metals, VOCs, semi-volatile organic compounds (SVOCs), flash-point and total petroleum hydrocarbons as diesel (TPH-D) and kerosene (TPH-K). TPH-D was detected at 24 ppm and TPH-K was detected at 20 ppm. The only organic compound detected was di-n-butylphthalate at 1.2 ppm. The presence of this compound was attributed to it being an artifact of a plasticizer that is often detected in environmental samples. The contents of the UST were removed and a soil boring was drilled adjacent to the UST to a depth of 4.5-feet bgs, which represented a depth of 1-foot beneath the bottom of the UST. The soil sample was analyzed for total petroleum hydrocarbons as gasoline (TPH-G), TPH-D, VOCs, SVOCs, and oil and grease. The only compound detected was benzene at 0.007 ppm. Based on these results, the UST was backfilled with concrete and the ACHCSA issued a no further action letter regarding this UST on April 5, 1996.

2.8 Off-Site Groundwater Sampling

Although no reports or description of the sampling could be located, tables and figures in various reports indicate that four "temporary wells" were installed in off-site locations near the site. These "temporary wells" are assumed to be Hydropunch sampling points based on their labels of HP-1 through HP-4. Since there are two sampling dates for HP-1 listed, it is also assumed that sampling in this location was repeated. Groundwater samples collected from HP-1 contained 21,000 ppb TPH-MS in December 1999, but contained less than 50 ppb in January 2000.^{new boring} Groundwater samples collected from HP-1 and HP-3 contained less than 100 ppb TPH-MS, and samples from HP-4 contained 570 ppb TPH-MS. It should be noted that HP-1 is located west of the Dunne Paint property and HP-4 was located south of the Dunne Paint property.

2.9 Groundwater Sampling

Groundwater samples have been collected on a periodic basis from the site groundwater monitoring wells. Depth to groundwater data and analytical results from the groundwater sampling are tabulated in Tables One and Two. During the most recent sampling on June 15, 2004, 0.15-feet of free-floating hydrocarbons were measured in monitoring well MW-B1, adjacent to the former UST, and 0.01-feet of free-floating hydrocarbons were measured in BES-1, adjacent to the former sump. Monitoring well MW-B2 contained TPH-MS at 3,000 ppb, and MW-B4

contained 1,300 ppb TPH-MS. No TPH-MS was detected in groundwater samples collected from MW-B3. Monitoring well MW-D1 on the former Dunne Paint site contained 100 ppb TPH-MS. None of the other former Dunne Paint property wells contained detectable concentrations of TPH-MS during the most recent sampling. Monitoring well MW-LD4 was found full of cement. No information is available on the destruction of this well.

2.10 March 1998 and January 2004 Phase I Reports

In March 1998, National Assessment Corporation (NAC) prepared a Phase I Environmental Site Assessment for the site. A second Phase I report was prepared by ASE in January 2004. Besides the UST and sump area issues discussed above, potential on-site environmental concerns discussed in the Phase I reports included (a) potential contamination in the former etching room, and (b) potential contamination in the former drum storage area. Although not noted in either Phase I report as a potential concern, ASE will also investigate the former ASTs near the former sump area as a potential source area.

3.0 CONDUIT AND POTENTIAL PREFERENTIAL PATHWAY STUDY

This study was conducted by reviewing Underground Service Alert (USA) markings in the site vicinity, reviewing documents such as as-built drawings supplied by the city and individual utility companies, and contacting individuals that would have knowledge of the individual utility lines. Figure 2 presents the location of all known utility lines in the site vicinity. A discussion of each type of line is presented below along with an evaluation as to whether each line could present a potential preferred pathway for the movement of groundwater contamination.

3.1 Main Water Lines

Main water lines in the site vicinity belong to East Bay Municipal Water District (EBMUD). The lines were mapped based on Underground Service Alert (USA) markings and maps provided by EBMUD (Appendix B). In 41st Street, the line runs along the north side of 41st Street between the northern sidewalk and monitoring wells MW-B2 and MW-B4. In 42nd Street, the water line runs beneath the northern portion of the street in the asphalt area. The water lines in Adeline Street run beneath the western portion of the street, and the water lines in Linden Street run beneath the eastern portion of the street. On June 14, 2004, ASE spoke to Mr. Rolly Mercurio of EBMUD for additional information on these lines.

Mr. Mercurio stated that the bottom of the trenches for water lines in the site vicinity are generally 3-feet bgs, although occasionally they will be as deep as 3.5-feet bgs. The only time that they will place lines deeper is if it is needed to cross under other utility lines. Their lines have no pitch and they use a sandy backfill material.

Since the shallowest groundwater measured at the site was over 5-feet bgs, these lines are above groundwater and will not provide a conduit for the migration of groundwater.

3.2 Natural Gas Lines

Natural gas lines in the site vicinity belong to Pacific Gas and Electric (PG&E). Based on USA markings and utility vaults, gas lines are located under the sidewalk on the north side of 41st Street, under the sidewalk on the south side of 42nd Street, and below the sidewalk on the east side of Adeline Street. On June 10, 2004, ASE spoke with Mr. Steve Bovaild of PG&E. Mr. Bovaild stated that PG&E's gas lines in the site vicinity are typically 36-inches bgs and placed on 4-inches of sand. Based on diameter of the lines, the sand base and typical depth of the line, he stated that the bottom of the trenches in the site vicinity is typically 44-inches bgs. The only variation is if an electric and gas line were placed in the same trench, then the trench would be 12-inches deeper. However, electric lines in the site vicinity are overhead so that would not apply.

Given the depth to groundwater in the site vicinity, these lines will not present a conduit for the preferential flow of groundwater.

3.3 Electric Lines

Electric lines in the site vicinity belong to PG&E. All of the PG&E electric lines in the immediate site vicinity are overhead, and therefore will not present a conduit for the preferential flow of groundwater. Electric lines for street lighting are located beneath the western sidewalk of Adeline Street. ASE could not find any additional information on these lines; however, street lighting electric lines are generally very shallow and it is highly unlikely that these lines are buried deep enough to present a potential conduit for the movement of groundwater.

3.4 Telephone Lines

ASE attempted to contact both SBC (formerly Pacific Bell) and AT&T numerous times regarding their lines in the site vicinity. None of our

phone calls were returned. However, the only telephone lines that were marked by USA were a SBC line under a portion of the northern sidewalk of 42nd Street, and a telephone conduit just west of the center of Adeline Street. It appears that the majority of telephone lines in the site vicinity are overhead.

Although neither SBC nor AT&T could be reached to discuss this specific location, ASE has previously spoken to AT&T and SBC regarding their typical depth of lines in the Oakland area. AT&T will not provide specific depth information on their lines, although they stated that they typically bury lines 3 to 4-feet bgs (on rare occasions up to 6-feet). They will only bury lines deeper than this if they have to trench under other buried lines. SBC has previously told ASE that they typically bury lines 30-inches below grade in the Oakland area with total trench depths of 3 to 4-feet bgs. Based on this information, it is unlikely that telephone lines will present a conduit for the preferential flow of groundwater in the site vicinity.

3.5 Cable Television Lines

The cable television lines in the site vicinity belong to Comcast. Comcast could not be reached to confirm whether they have any underground lines in the site vicinity. No cable television lines were marked by USA in the site vicinity. It is likely that these lines are overhead. If buried, Comcast has previously told ASE that they typically bury lines approximately 36-inches below grade. Based on this information, these lines, if present, will not present a conduit for the preferential flow of groundwater.

3.6 Storm Sewer Lines

The City of Oakland has a 15-inch diameter storm sewer line down the middle of Linden Street. The bottom of this line is approximately 5.2-feet bgs at the intersection of 42nd Street and Linden Street and pitches to the south. There was no information available as to what material may have been used to backfill the trenches over the line. City of Oakland sewer maps and monument elevations are included in Appendix C. The shallowest groundwater measured at the site was 5.08-feet bgs, which is just above the depth of this line. However, the water table at the site is typically 6 to 8-feet bgs and it was only on one rare occasion that groundwater was above 6-feet bgs. Except in the highest water table conditions, this line would not be considered a potential conduit for the movement of contamination. In addition, this line is generally upgradient of the site, and groundwater contamination would not be expected in the vicinity of this line. Based on this information, it is unlikely that this line

will present a potential preferred pathway for the movement of contaminated groundwater.

The City of Emeryville has an 18-inch diameter storm sewer line down Adeline Street. The bottom of this line is approximately 5 to 6-feet bgs and pitches to the south. There was no information available as to what material may have been used to backfill the trenches over the line. City of Emeryville sewer maps are included in Appendix D. Since groundwater has been measured at the site as shallow as 5.08-feet bgs, it is possible that this line could be a conduit for the movement of groundwater during rare periods of high water table. However, since the water table at the site is typically 6 to 8-feet bgs, this line would not be considered a potential conduit for the movement of contamination except during very rare periods of very high water table conditions.

EBMUD has a line known as the Adeline Storm Water Interceptor beneath Adeline Street. This is a 48-inch diameter line with a total depth of 18-feet bgs. The bottom of this line is always below the typical depth of groundwater in the site vicinity. For this reason, this line should be considered a potential conduit for the preferential movement of groundwater. Trench plugs were placed in the annular space surrounding the line to prevent the preferential movement of groundwater along this conduit. If properly constructed, these trench plugs should prevent this trench line from being a preferential pathway for the movement of contaminated groundwater. The as-built drawings for this line show that extra trench plugs were placed along this line between 40th Street and 41st Street in an area where soil contamination was encountered (Appendix E). This location is southwest of the site and directly west of the former Dunne Paint facility. ASE will take this line into account during this assessment, and if it appears that contamination from the Kozel property is entering this conduit, then ASE will recommend further assessment along this line.

3.7 Sanitary Sewer Lines

Both City of Oakland and City of Emeryville sewer line maps show an 8-inch diameter sanitary sewer line beneath the center of 42nd Street for three quarters of a block connecting into the City of Emeryville sanitary sewer line in Adeline Street. This line is approximately 5-feet bgs and pitches to the west. The City of Oakland also has an 8-inch diameter sanitary sewer line down the center of 41st Street from the Oakland-Emeryville border to Linden Street. This line is approximately 5 to 7-feet bgs and pitches to the east. A 16-inch diameter City of Oakland sanitary

sewer runs down the center of Linden Street. This line is approximately 8-foot bgs and pitches to the south. City of Oakland sewer maps and monument elevations are included in Appendix C. No information on the backfill material used in the sewer line trenches was available.

The City of Emeryville has a sanitary sewer line down 41st Street from the Oakland-Emeryville border that pitches to the west and connects into a City of Emeryville sewer running down the center of Adeline Street. The Adeline Street sewer is a 12-inch diameter line that pitches to the south. The City of Emeryville sanitary sewer line in Adeline Street is at a depth of 7-8-foot bgs and pitches to the south. City of Emeryville sewer maps are presented in Appendix D.

The sanitary sewer lines in 41st Street, Adeline Street, and Linden Street are deeper than the groundwater elevations during some of the groundwater monitoring events. For this reason, these lines could be potential conduits for the preferential movement of groundwater. Although the Linden Street line is generally upgradient of the site, ASE will assess the possibility of the sewer lines in 41st Street and Adeline Streets as being a potential conduit for the movement of groundwater contamination during the assessment to be conducted at the site.

4.0 AREA WELL SURVEY

ASE obtained well completion reports for all wells within 1/4-mile of the site from the California Department of Water Resources (DWR). ASE also requested records from the Alameda County Public Works Agency (ACPWA) regarding wells within 1/4-mile of the site. However, the ACPWA has a several month backlog in supplying these records. Therefore records from the ACPWA could not be included in this survey. Once, these records are supplied to ASE we will prepare an addendum to this report if any additional wells are located that are not included in this survey. The wells located in this survey are listed in Table Three along with the well address or location, well owner and address, well type, well screen interval and year drilled. The location of wells are shown on Figure 3. The DWR records are presented in Appendix F. Thirteen wells were identified during this survey. Of these wells, eight are monitoring wells, two are cathodic protection wells, one is a destroyed well, and two are of unknown use. No domestic, irrigation or municipal water supply wells were located. Based on the well locations and the groundwater flow direction, the only well that appears to be a potential conduit for the movement of contamination would be the destroyed well near the site which consisted of pea gravel fill between 20 and 65-foot bgs. However, it

appears that this well is generally upgradient of the site. Since mineral spirits are not readily soluble in water, and given that there is no apparent pumping stress on the deeper aquifer, it is highly unlikely that this destroyed well could be a conduit for the downward movement of contamination.

5.0 OTHER POTENTIAL CONDUITS

ASE surveyed the immediate site vicinity for other potential conduits for the preferential migration of contamination, including basements in nearby homes. The following presents our findings.

5.1 Basements

ASE surveyed the potential for basements in residential properties in the immediate site vicinity. Approximate locations of these buildings are shown on Figure 2.

5.1.1 1020 41st Street

ASE could not gain access to this property due to the entrance being fenced in. However, ASE spoke with the neighbor at 4102 Adeline Street, Ms. Sara Domenico, who was familiar with the property. She stated that the property did not have a basement.

5.1.2 4102 Adeline Street

ASE spoke with resident Ms. Sara Domenico at this property. She stated that this building did not have a basement.

5.1.3 4106 Adeline Street

ASE spoke with a resident at this property. This resident stated that the property did not have a basement. The resident would not give his name.

5.1.4 4112 Adeline Street

ASE spoke with a resident at this property. Although he would not give his name, he stated that the property did not have a basement. The garage on this property did appear to slope to about 2-feet below normal grade.

5.1.5 4114-4120 Adeline Street

This property consists of four apartments. The addresses of these apartments are 4114 Adeline Street, 4116 Adeline Street, 4118 Adeline Street, and 4120 Adeline Street. No one was home at any of these four addresses. From the outside of this property, it appeared that the property had a basement. However, the basement appeared to be primarily aboveground and no more than 2-feet below ground surface.

5.1.6 1085-1087 41st Street

This property consists of two apartments. ASE spoke with resident Mr. Mohammed Yousuf at this property. He stated that this building did not have a basement.

5.2 Other Conduits

ASE did not identify any other obvious conduits in the site vicinity. However, Clayton Group Services, the environmental consultant for the former Dunne Paint property located at 1007 41st Street, has identified several zones of high permeability on that property that they identify as "stream channels." These zones could be a potential conduit for the preferential movement of contaminated groundwater in the subsurface in the site vicinity. Although no "stream channels" have been identified on the Kozel property, ASE can not rule out their existence on or near the property.

6.0 CONCEPTUAL SITE MODEL

The site has had a release of mineral spirits from two former USTs (or associate piping), possibly a former sump, and possibly former aboveground storage tanks, drums, and an etching room. Since the USTs, ASTs and drums have now been removed, the sumps have been filled, and the etching room is no longer in service, there are no longer any potential active sources of contamination. ASE will investigate all of these potential source areas during the upcoming assessment.

Only poor quality descriptions of soil were available from previous investigations. All boring logs from the previous on-site investigations either lacked details or contained significant conflicting information. Some logs showed low permeability soils and others showed higher permeability soils such as gravelly sand. More detailed hydrogeologic

information will be collected during the assessment to take place at the site. Groundwater was encountered at depths ranging from 5-feet bgs to 8-feet bgs, although typical groundwater depths range from 6 to 8-feet bgs.

The extent of contamination in groundwater has not been defined horizontally to the north, west or east. The extent of contamination appears to have been defined to 100 ppb to the south by wells for the Dunne Paint facility and to non-detect to the southwest by wells CW-1, CW-2 and CW-3 for the former Dunne Paint facility. ASE has, however, received verbal reports that mineral spirits have been detected at two sites southwest of Dunne Paint monitoring wells CW-1, CW-2 and CW-3. If this is correct, it is possible that contamination may have migrated through preferred pathways past these monitoring wells. The vertical extent of contamination has not yet been defined, but given the low solubility of mineral spirits, it is unlikely that there is significant vertical migration of contamination. Given the depth to groundwater and the depth to the bottom of the sewer line trench in 41st Street, it is possible that this trench could act as a preferred pathway for the movement of contaminated groundwater during periods of a high water table. In addition, the EBMUD line in Adeline Street is definitely deep enough to be a potential conduit for the movement of contaminated groundwater; however, it appears that this trench was constructed to prevent this movement of contaminated groundwater in this site vicinity.

No water supply wells were identified within a 1/4-mile of the site. Since properties in the site vicinity receive water from EBMUD, which does not utilize groundwater for their water supplies, it is unlikely that groundwater in the site vicinity will ever be used for drinking water supplies. In addition, since there is very little vegetation in the site vicinity, it is also unlikely that groundwater in the site vicinity will be used for irrigation. Based on this information, it appears unlikely that ingestion or direct contact with groundwater should be considered a potential exposure route for human contact.

At this time it does not appear that contamination from California Linen Supply, upgradient of the site, has co-mingled with contamination that originated on the subject property. There may have been co-mingling of contamination from both the Kozel property and the former Dunne Paints property. However, based on the results from monitoring wells MW-B3, MW-D1 and MW-D2, any co-mingling of these plumes appears to be minimal. If, however, there is contamination downgradient of these sites that could be attributed to groundwater movement through preferred

pathways, then it is possible that there could more co-mingling of these plumes than believed at this time.

7.0 OUTLINE OF PROPOSED SCOPE OF WORK (SOW)

The purpose of this assessment is to further define the extent of soil and groundwater contamination at the site and to assess the risk associated with the presence of soil and groundwater contamination beneath the site. The scope of work for this project is to:

- 1) Obtain a drilling permit from the Alameda County Public Works Agency.
- 2) Obtain encroachment permits from the Cities of Oakland and Emeryville to drill in city streets.
- 3) Contract with a subsurface utility locating service to clear drilling locations of underground utility lines.
- 4) Drill at least 20 soil borings in both on and off-site locations and collect soil and groundwater samples for analysis.
- 5) Following collection of the soil and groundwater samples, backfill the borings described in task 4 with neat cement placed by tremie pipe.
- 6) Analyze soil and groundwater samples collected from each boring at a CAL-DHS certified analytical laboratory for TPH-MS by modified EPA Method 8015 and VOCs by EPA Method 8260B.
- 7) Prepare a report presenting results from this assessment. This report will present tabulated analytical results, geologic cross-sections, potentiometric surface maps, an updated conceptual site model, and recommendations for additional borings, monitoring wells or remediation, as necessary.

8.0 DETAILS OF PROPOSED SOW

Details of the assessment are presented below.

TASK 1 - *OBTAIN A DRILLING PERMIT FROM THE ALAMEDA COUNTY PUBLIC WORKS AGENCY*

Prior to drilling, ASE will obtain a drilling permit from the Alameda County Public Works Agency.

TASK 2 - *OBTAIN ENCROACHMENT PERMITS TO DRILL IN THE CITY STREETS*

Prior to drilling, ASE will obtain encroachment permits from the Cities of Oakland and Emeryville to drill borings in their right of way.

TASK 3 - *CONTRACT WITH AN UNDERGROUND UTILITY LINE LOCATING SERVICE TO ACCURATELY LOCATE UNDERGROUND UTILITY LINES IN STREET AREAS*

ASE will contact Underground Service Alert (USA) at least 48 hours prior to drilling. ASE will also contract with a private underground utility locating service to pinpoint the location of utility lines in the drilling locations.

TASK 4 - *DRILL TWENTY SOIL BORINGS ON AND OFF-SITE AND COLLECT SOIL AND GROUNDWATER SAMPLES FROM THE BORINGS FOR ANALYSIS*

ASE will drill twenty soil borings in both on and off-site locations (Figure 4). The borings will be drilled using a Geoprobe or similar type drill rig. A Badger drill rig will be used inside building locations where a truck-mounted drill rig can not be utilized. One boring will be located approximately 50-feet downgradient of monitoring well MW-B1 and three borings will be located along Adeline Street to define the downgradient extent to contamination to the west. Two borings will be located in 41st Street near the sanitary sewer line to determine whether this line could be a potential conduit for the movement of contaminated groundwater. One boring will be located along 41st Street to the east of the loading dock to determine the extent of contamination to the east. One boring will be located in the former drum storage area to determine whether there has been any environmental impacts in this area. One boring will be located in the large loading dock to determine whether the site remains impacted from previous contamination from the UST in this area, and one boring will be located to the north of this location to determine whether the northern extent of contamination in this area. The remaining borings will be located in the areas of the former ASTs and the former etching room

to determine whether these areas could be the source for the product/water mixture that was found emanating from soil beneath the building at the time of the former UST removal from the 41st Street sidewalk. An ASE geologist will direct the drilling.

Undisturbed soil samples will be collected continuously for subsurface hydrogeologic description and possible chemical analysis. The samples will be described by the ASE geologist according to the Unified Soil Classification System (USCS). The samples will be collected in brass or acetate tubes using a drive sampler advanced as the boring progresses. Each sample will be immediately removed from the sampler, trimmed, sealed with Teflon tape and plastic caps, secured with duct tape, and labeled with the site location, sample designation, date and time the sample was collected, and the initials of the person collecting the sample. The samples will then be placed into an ice chest containing wet ice for delivery under chain of custody to a CAL-EPA certified analytical laboratory.

Soil from the remaining tubes not sealed for analysis will be removed for hydrogeologic description and will be screened for volatile compounds with a photoionization detector (PID). The soil will be screened by emptying soil from one of the tubes into a plastic bag. The bag will be sealed and placed in the sun for approximately 10 minutes. After the hydrocarbons have been allowed to volatilize, the PID will measure the vapor through a small hole, punched in the bag. These PID readings will be used as a screening tool only since these procedures are not as rigorous as those used in an analytical laboratory.

*7/ Samples/
borings*

After groundwater is encountered, ASE will collect groundwater samples from the borings using a bailer. The groundwater samples will be slowly decanted from the bailer into 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid and sealed without headspace. The samples will then be labeled and placed in an ice chest with wet ice for transportation to the analytical laboratory under chain of custody documentation.

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All sampling equipment will be cleaned in buckets with brushes and an Alconox solution, then rinsed twice with tap water. Rinsates will be contained on-site in 55-gallon steel drums until off-site disposal can be arranged.

TASK 5 - BACKFILL THE BORINGS WITH NEAT CEMENT

Following collection of the soil and groundwater samples, the boreholes will be backfilled with neat cement placed by tremie pipe.

TASK 6 - ANALYZE SOIL AND GROUNDWATER SAMPLES COLLECTED FROM THE BORINGS

Each soil and groundwater sample will be analyzed at a CAL-DHS certified environmental laboratory for TPH-MS by EPA Method 8015, and VOCs by EPA Method 8260B.

TASK 7 - PREPARE A SOIL AND GROUNDWATER ASSESSMENT REPORT

ASE will prepare a subsurface assessment report presenting the methods and findings of this assessment. This report will include a summary of the results, the site background and history, tabulated soil and groundwater analytical results, geologic cross-sections, potentiometric surface maps, an updated conceptual site model, conclusions and recommendations for appropriate additional assessment and feasibility tests for remediation, as necessary. Formal boring logs, analytical reports, and chain of custody documents will be included as appendices. This report will be submitted under the seal of a California registered civil engineer or geologist.

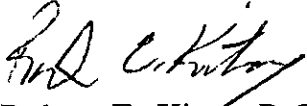
8.0 SCHEDULE

ASE will proceed with this project immediately upon approval of this workplan by the ACHCSA.

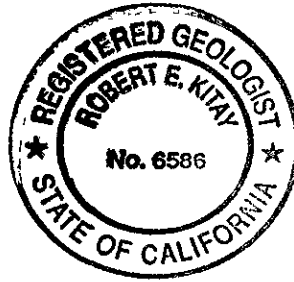
Should you have any questions or comments, please call us at (925) 820-9391.

Respectfully submitted,

AQUA SCIENCE ENGINEERS, INC.



Robert E. Kitay, R.G., R.E.A.
Senior Geologist



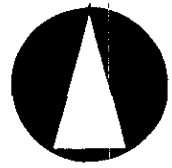
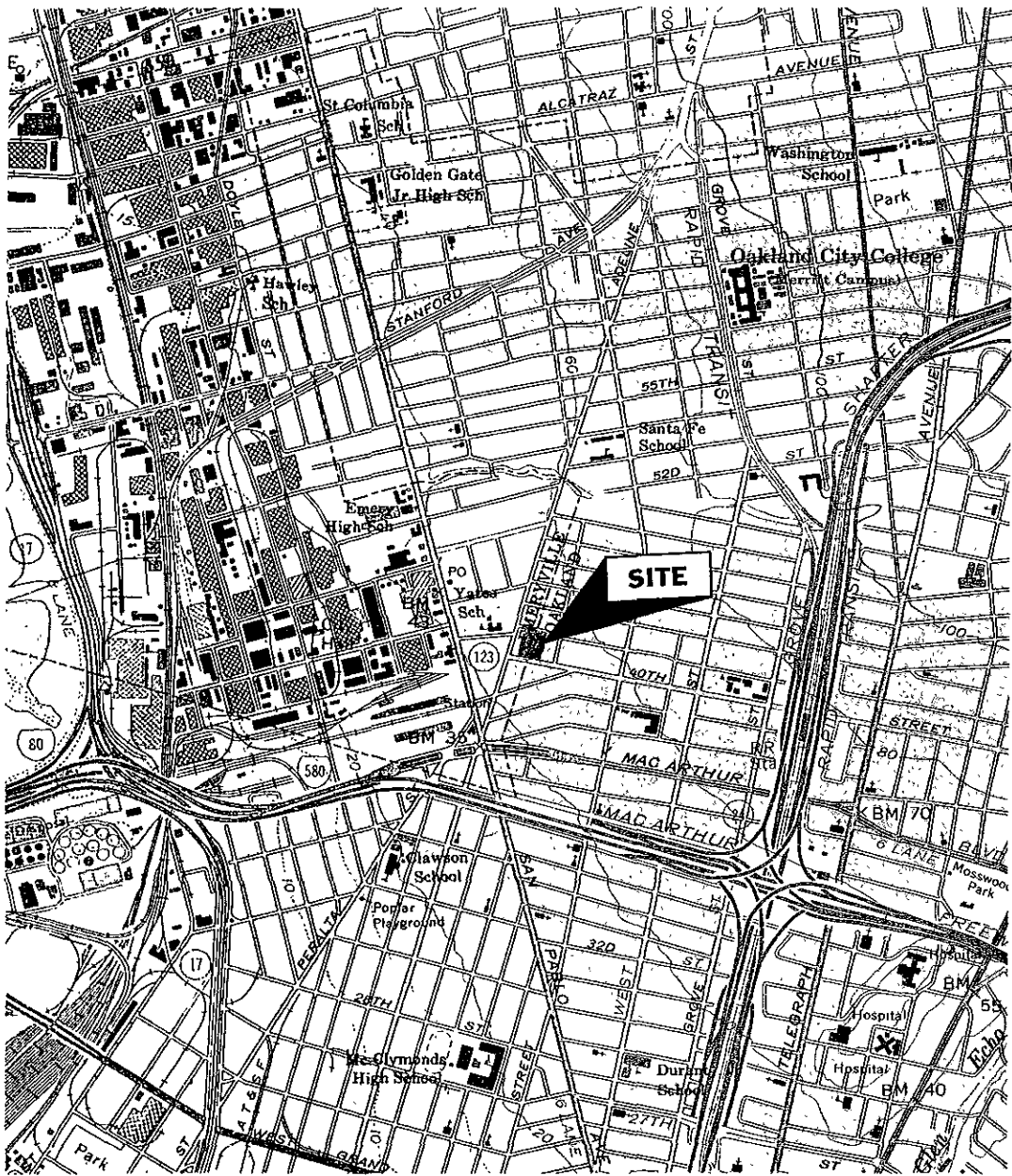
cc: Mr. Edward Kozel, 20 Oak Knoll Drive, Healdsburg, CA 95448-3108

Mr. Randolph Harris, Harris and Harris, Ordway Building, One Kaiser Plaza, Suite 1010, Oakland, CA 94612-3601

Mr. Barney Chan, Alameda County Health Care Services Agency, 1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502

Ms. Betty Graham, California Regional Water Quality Control Board, San Francisco Bay Region, 1515 Clay Street, Suite 1400, Oakland, CA 94612

FIGURES



NORTH

SITE LOCATION MAP

Kozel Property
 1001 42nd Street
 Oakland, California

AQUA SCIENCE ENGINEERS, INC.

FIGURE 1



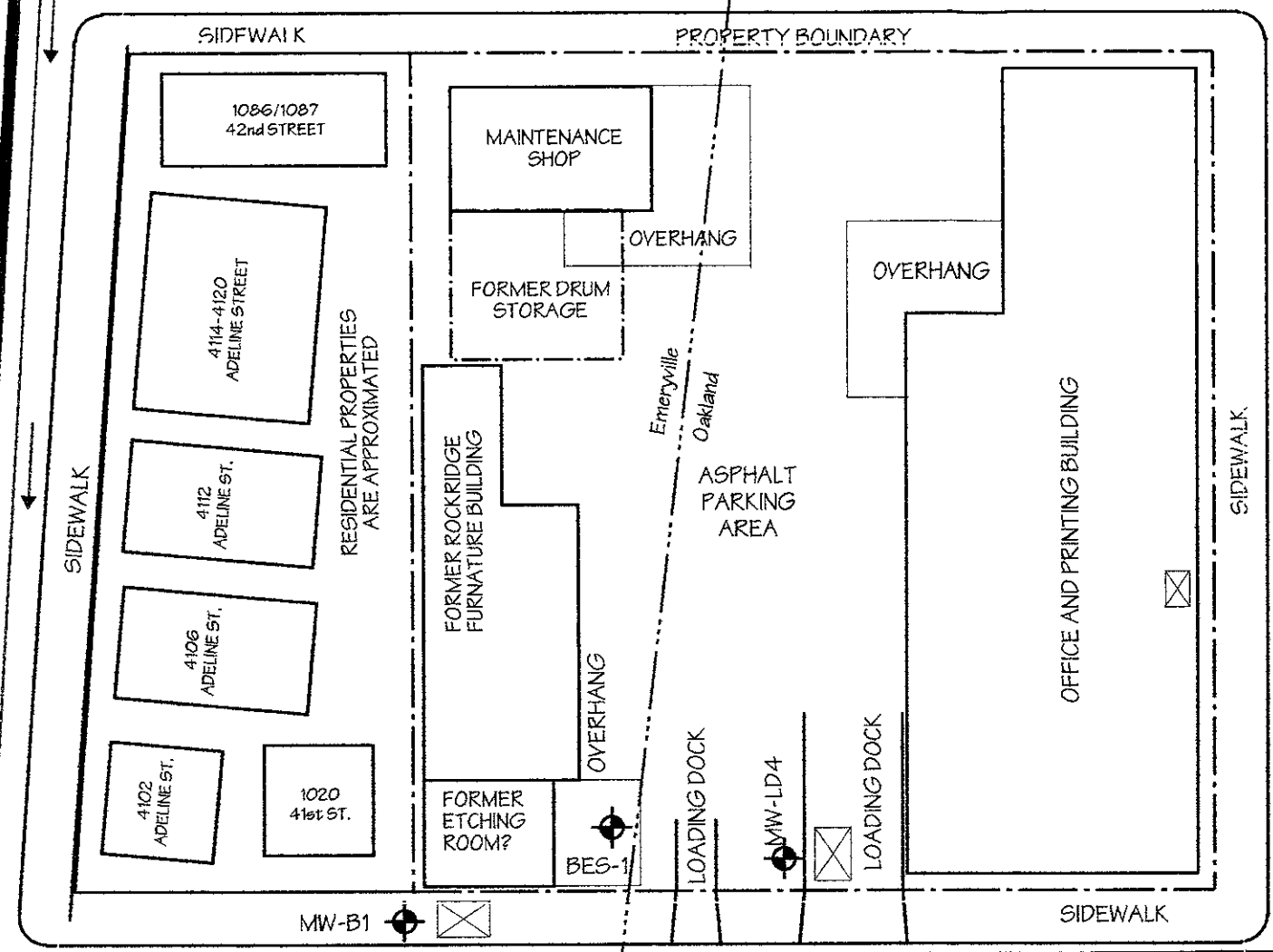
NORTH

SCALE
1 INCH = 50 FEET

42nd STREET

ADELINE STREET

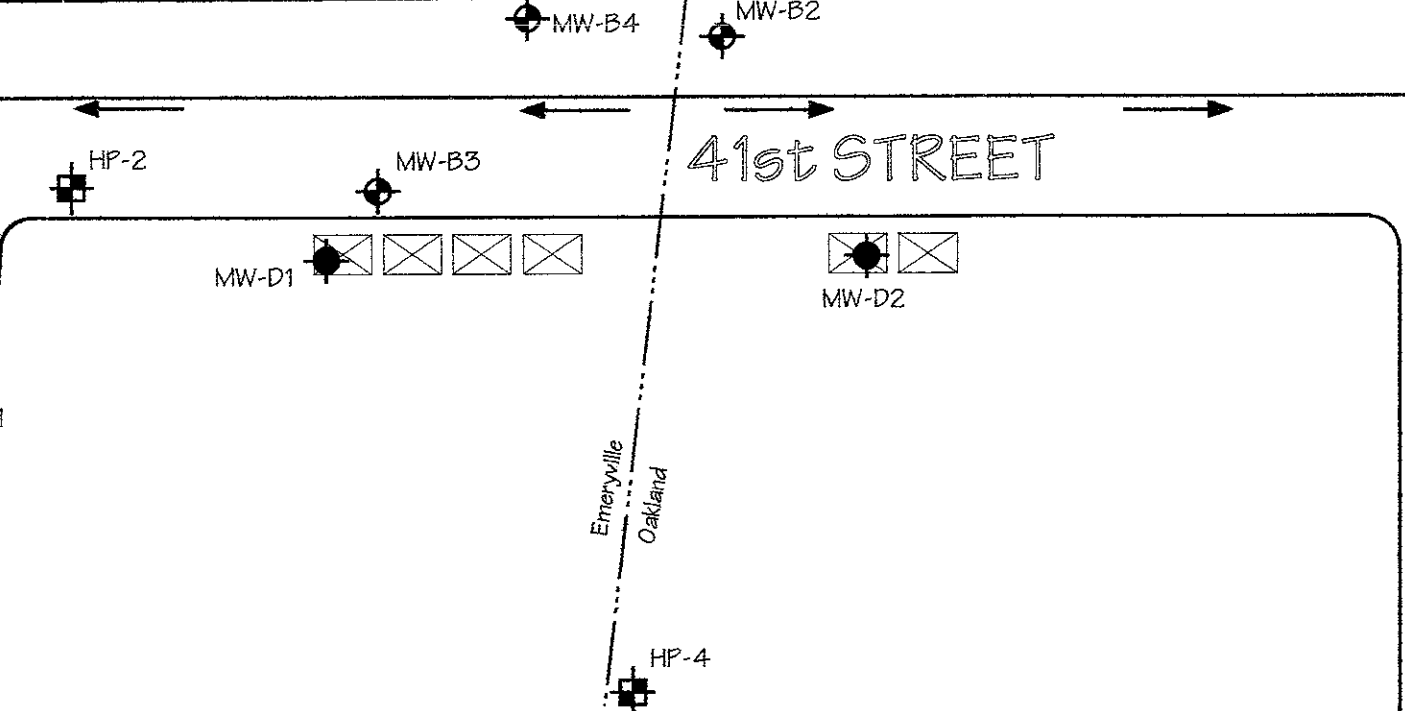
LINDEN STREET



LEGEND

- FORMER UST
- MW-B4 MONITORING WELL FOR KOZEL PROPERTY
- MW-D2 MONITORING WELL FOR DUNNE PAINTS
- HP-4 TEMPORARY WELL LOCATION
- GAS LINE
- ELECTRIC LINE
- TELEPHONE LINE
- STORM SEWER LINE
- SANITARY SEWER LINE
- WATER LINE

41st STREET

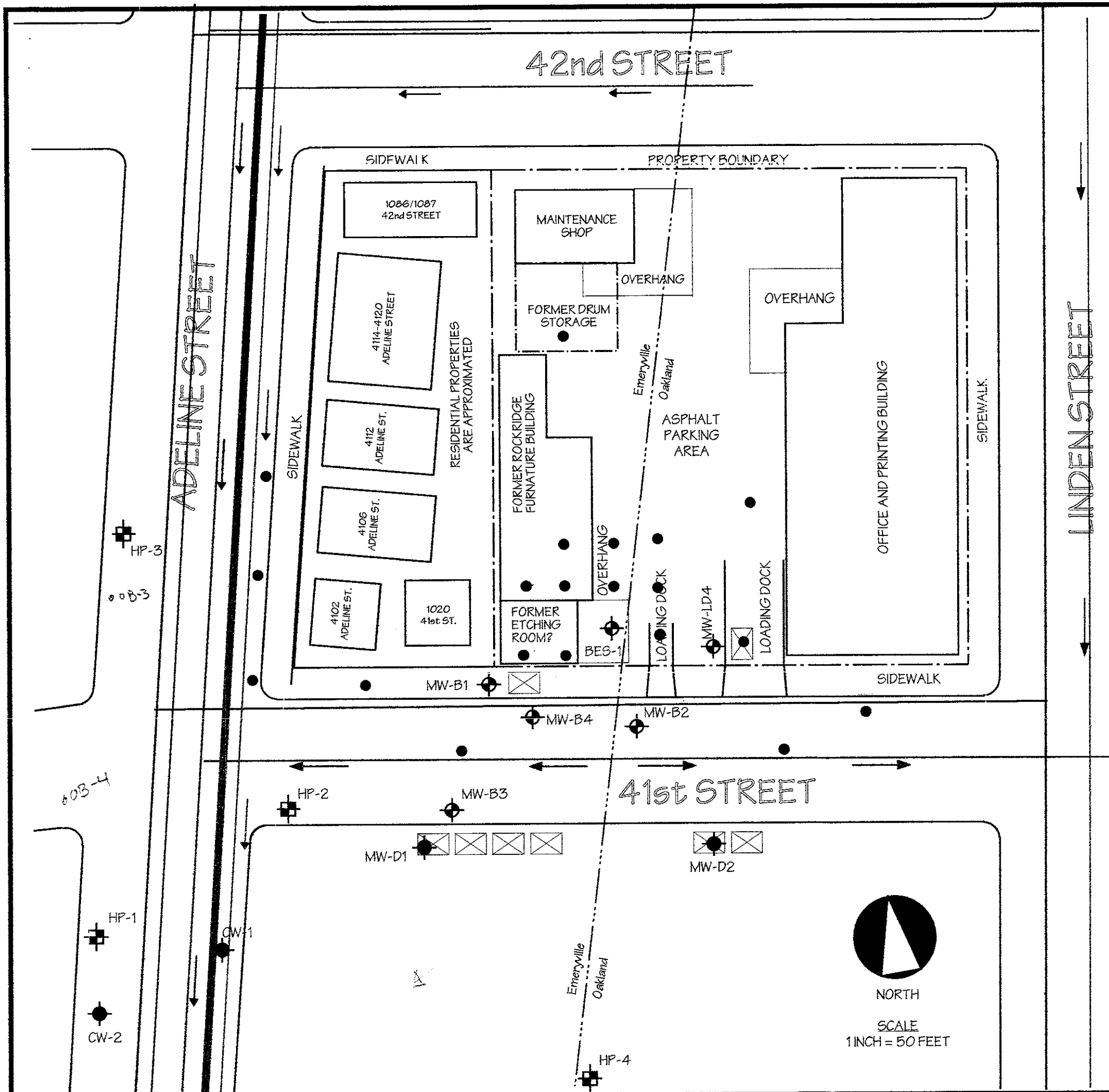


SITE PLAN AND UTILITY LINE LOCATION MAP













Date: July 23, 2004 Scale: 1" = 50'

Kozel Property
1001 42nd Street
Oakland, California

Aqua Science Engineers, Inc. Figure 2

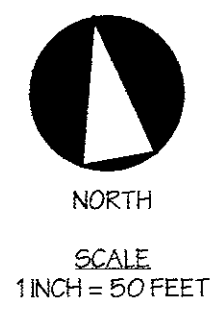


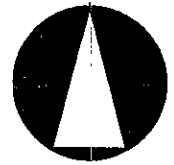
LEGEND

-  FORMER UST
-  MW-B4 MONITORING WELL FOR KOZEL PROPERTY
-  MW-D2 MONITORING WELL FOR DUNNE PAINTS
-  HP-4 TEMPORARY WELL LOCATION
-  GAS LINE
-  ELECTRIC LINE
-  TELEPHONE LINE
-  STORM SEWER LINE
-  SANITARY SEWER LINE
-  WATER LINE
-  PROPOSED GEOPROBE BORING LOCATION
-  PROPOSED BADGER BORING LOCATION

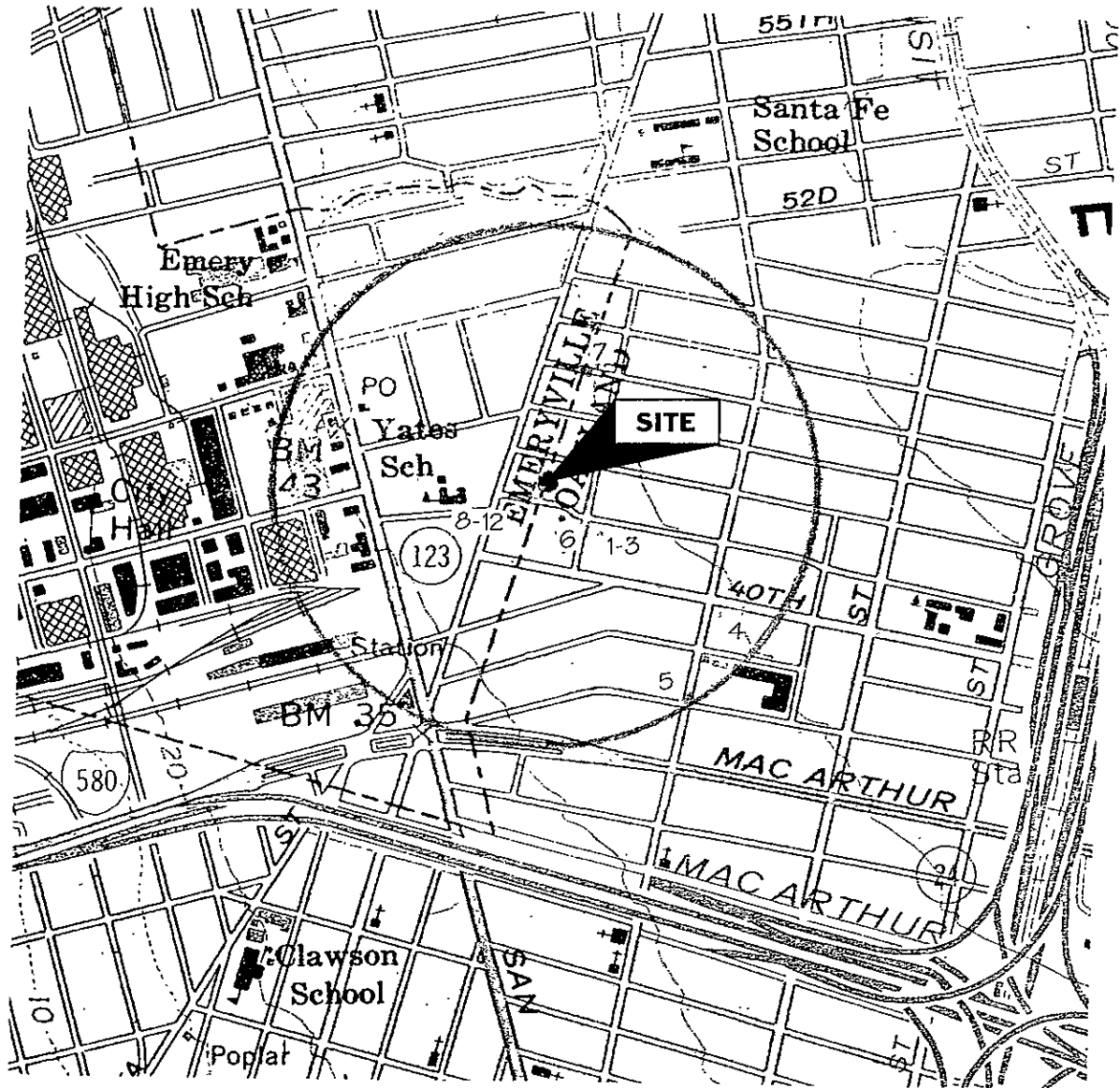
PROPOSED BORING LOCATION MAP

Date: July 23, 2004	Scale: 1" = 50'
Kozel Property 1001 42nd Street Oakland, California	
Aqua Science Engineers, Inc.	Figure 4





NORTH



MAP OF WELLS WITHIN
1/4-MILE RADIUS OF SITE

Kozel Property
1001 42nd Street
Oakland, California

AQUA SCIENCE ENGINEERS, INC.

FIGURE 3

TABLES

TABLE ONE
 Groundwater Elevation Data
 Kozel Property
 1001 42nd Street, Oakland, CA 94608

Well ID	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (msl)
---------	---------------------	-------------------------------	-----------------------	-------------------------	-----------------------------

Former ONE Facility

MW-B1	6/10/93	49.92	6.14		43.78
	7/8/93		6.64		43.28
	8/24/93		6.69		43.23
	9/29/93		8.46		41.46
	10/20/93		6.69		43.23
	11/23/93		6.65		43.27
	12/10/98		---		---
	12/14/99		---		---
	6/15/04		6.00	5.85	44.04*
MW-B2	6/10/93	50.77	6.75		44.02
	7/8/93		6.91		43.86
	8/24/93		7.22		43.55
	9/29/93		8.80		41.97
	10/20/93		7.25		43.52
	11/23/93		7.26		43.51
	12/10/98		6.43		44.34
	12/14/99		6.50		44.27
	6/15/04		6.40		44.37
MW-B3	6/10/93	49.02	6.85		42.17
	7/8/93		6.05		42.97
	8/24/93		6.21		42.81
	9/29/93		7.74		41.28
	10/20/93		6.24		42.78
	11/23/93		6.18		42.84
	12/10/98		4.94		44.08
	12/14/99		5.08		43.94
	6/15/04		5.43		43.59

TABLE ONE
 Groundwater Elevation Data
 Kozel Property
 1001 42nd Street, Oakland, CA 94608

Well ID	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (msl)	
MW-B4	6/10/93	49.74	6.00		43.74	
	7/8/93		6.14		43.60	
	8/24/93		6.34		43.40	
	9/29/93		7.97		41.77	
	10/20/93		6.11		43.63	
	11/23/93		6.38		43.36	
	12/10/98		6.20		43.54	
	12/14/99		6.05		43.69	
	6/15/04		5.58	sheen	44.16	
MW-LD4	6/10/93	51.51	6.98		44.53	
	7/8/93		7.18		44.33	
	8/24/93		7.31		44.20	
	9/29/93		7.43		44.08	
	10/20/93		7.37		44.14	
	11/23/93		7.32		44.19	
	12/10/98		6.14		45.37	
	12/14/99		6.52		44.99	
	6/15/04		Well Abandoned			
BES-1	12/10/98	Not surveyed	10.18		---	
	12/14/99		10.98		---	
	6/15/04		9.95	9.94	---	
<u>Former Dunne Palms</u>						
MW-D1	6/10/93	50.56	5.29		45.27	
	7/8/93		5.67		44.89	
	8/24/93		6.01		44.55	
	9/29/93		7.69		42.87	
	10/20/93		6.20		44.36	
	11/23/93		6.08		44.48	
	12/14/99		4.60		45.96	
	11/12/03		49.32	5.98		43.34
	3/12/03		5.97		43.35	
6/15/04	6.07		43.25			

TABLE ONE
 Groundwater Elevation Data
 Kozel Property
 1001 42nd Street, Oakland, CA 94608

Well ID	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Depth to Product (feet)	Groundwater Elevation (msl)
MW-D2	6/10/93	50.56	6.25		44.31
	7/8/93		6.37		44.19
	8/24/93		6.47		44.09
	9/29/93		7.96		42.60
	10/20/93		6.48		44.08
	11/23/93		6.44		44.12
	12/10/98		5.68		44.88
	12/14/99	5.80		44.76	
	11/12/03	50.52	9.52		41.00
	3/12/03		8.94		41.58
6/15/04	5.89			44.63	
CW-1	11/12/03	47.55	8.93		38.62
	3/12/03		6.85		40.70
	6/15/04		7.85		39.70
CW-2	11/12/03	47.59	9.25		38.34
	3/12/03		7.22		40.37
	6/15/04		8.40		39.19
CW-3	11/12/03	46.39	8.30		38.09
	3/12/03		6.04		40.35
	6/15/04		7.74		38.65

NOTES:

* = Groundwater elevation adjusted for free-floating hydrocarbons by the equation:
 Adjusted groundwater elevation = Top of of casing elevation - depth to groundwater +
 (0.8 x free-floating hydrocarbon thickness)

TABLE TWO
 Summary of Analytical Results for GROUNDWATER Samples
 Kozei Property (Former O.N.E. Color Communications)
 And Former Dunne Quality Paints
 1001 42nd Street, Oakland, CA 94608
 All results are in parts per billion (ppb)

Well ID & Dates Sampled	Mineral Spirits	Other TPH (As Noted)	Toluene	Ethyl benzene	Total Xylenes	tert-Butyl benzene	sec-Butyl benzene	n-Butyl benzene	Vinyl chloride	1,1-Dichloro ethane	trans-1,2- Dichloro ethene	cis-1,2- Dichloro ethene	Other VOCs
Former O.N.E. Color Communications													
MW-B1													
9/30/1991	-	< 50 ^a ; 18,000 ^a ; 29,000 ^a	6	250	980	ND	ND	ND	ND	ND	ND	ND	5 (benzene)
6/10/1993	-	27,000 ^a ; 57,000 ^a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/29/1993	43,000	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
5/28/2003	26,000	1,100,000 ^a ; 37,000 ^a	< 2.5	< 2.5	< 2.5	23	< 2.5	< 2.5	< 2.5	< 2.5	-	< 2.5	< 2.5 - < 25
6/15/2004						Not Sampled Due to Free Product							
MW-B2													
6/10/1993	-	3,800 ^a ; 1,400 ^a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/29/1993	290,000	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/10/1998	150,000	< 1,000 ^a ; ND ^a ; 2,400 ^a ; < 1,000 ^a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/14/1999	630	-	-	-	-	-	-	-	-	-	-	-	-
5/28/2003	1,100	22,000 ^a ; 1,600 ^a	< 0.5	< 0.5	< 0.5	3.2	3.2	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5 - < 5
6/15/2004	3,000	-	< 5	< 5	< 10	< 10	< 10	33	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 - < 500
MW-B3													
6/10/1993	-	1,700 ^a ; 510 ^a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/29/1993	2,400	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/10/1998	120	ND ^a ; ND ^a ; 830 ^a ; ND ^a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/14/1999	< 50	-	-	-	-	-	-	-	-	-	-	-	-
5/28/2003	ND	ND ^a ; ND ^a	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	< 0.5	< 0.5 - < 5
6/15/2004	< 50	-	< 0.5	< 0.5	< 1.0	< 1.0	< 1.0	< 1.0	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5 - < 50
MW-B4													
6/10/1993	-	36,000 ^a ; 36,000 ^a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
9/29/1993	1,400	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/10/1998	7,500	1,000 ^a ; ND ^a ; 2,700 ^a ; ND ^a	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/14/1999	5,100	-	-	-	-	-	-	-	-	-	-	-	-
5/28/2003	990	7,000 ^a ; 14,000 ^a	< 0.5	< 0.5	< 0.5	2.8	< 0.5	< 0.5	1.8	< 0.5	-	< 0.5	< 0.5 - < 5
6/15/2004	1,300	-	< 5	< 5	< 10	< 10	< 10	< 10	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0 - < 500

TABLE TWO

Summary of Analytical Results for GROUNDWATER Samples
 Kozel Property (Former O.N.E. Color Communications)
 And Former Dunne Quality Paints
 1001 42nd Street, Oakland, CA 94608
 All results are in parts per billion (ppb)

Well ID & Dates Sampled	Mineral Spirits	Other TPH (As Noted)	Toluene	Ethyl benzene	Total Xylenes	tert-Butyl benzene	sec-Butyl benzene	n-Butyl benzene	Vinyl chloride	1,1-Dichloro ethane	trans-1,2- Dichloro ethene	cis-1,2- Dichloro ethene	Other VOCs
BES-1													
4/21/1994	12,000	18,000*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/10/1998	78,000	< 1,000*; < 1,000*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
12/14/1999	72,000	-	-	-	-	-	-	-	-	-	-	-	-
5/28/2003	60,000	19,000*; 84,000*	< 0.5	< 0.5	< 0.5	4.4	< 0.5	< 0.5	20	1.5	2.1	17	< 0.5 - < 5
6/18/2003	120,000	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	18	< 0.5	< 0.5	14	< 0.5 - < 5
6/15/2004	Not Sampled Due to Free Product												
MW-LD4													
9/30/1991	-	-	3.1	9.0	24	-	-	-	-	-	-	-	2.0 (benzene)
6/10/1993	-	21,000 ^b ; 1,100 ^d	ND	ND	ND	-	-	-	-	-	-	-	-
9/29/1993	700	-	ND	ND	ND	-	-	-	-	-	-	-	-
12/10/1998	130	170*; ND ^c ; 83 ^d ; ND ^e	ND	ND	ND	-	-	-	-	-	-	-	-
12/14/1999	440,000	-	-	-	-	-	-	-	-	-	-	-	-
1/13/2000*	650,000	-	-	-	-	-	-	-	-	-	-	-	-
6/15/2004	Abandoned												
Former Dunne Paints													
MW-D1													
8/26/1988	1,000	-	-	-	-	-	-	-	-	-	-	-	-
1/18/1989	< 1,000	-	2.0	ND	1.8	-	-	-	-	-	-	-	-
4/24/1989	< 1,000	-	ND	ND	11	-	-	-	-	-	-	-	-
2/21/1990	< 100	ND ^a ; ND ^b ; ND ^c	ND	0.4	1.3	-	-	-	-	-	-	-	-
6/10/1992	< 50	ND ^a ; ND ^b ; ND ^c	ND	ND	ND	-	-	-	-	-	-	-	-
6/10/1993	-	220 ^b ; 230 ^d	ND	ND	ND	-	-	-	-	-	-	-	-
9/24/1993	< 50	ND ^a ; ND ^c	ND	ND	ND	-	-	-	-	-	-	-	-
9/29/1993	110	-	ND	ND	ND	-	-	-	-	-	-	-	-
12/14/1999	< 50	-	-	-	-	-	-	-	-	-	-	-	-
11/12/2003	85	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
3/12/2004	260	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
6/15/2004	100	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 5.0 - < 50

TABLE TWO

Summary of Analytical Results for GROUNDWATER Samples
 Koze! Property (Former O.N.E. Color Communications)
 And Former Dunne Quality Paints
 1001 42nd Street, Oakland, CA 94608
 All results are in parts per billion (ppb)

Well ID & Dates Sampled	Mneral Spirits	Other TPH (As Noted)	Toluene	Ethyl benzene	Total Xylenes	tert-Butyl benzene	sec-Butyl benzene	n-Butyl benzene	Vinyl chloride	1,1-Dichloro ethane	trans-1,2-Dichloro ethene	cis-1,2-Dichloro ethene	Other VOCs
MW-D2													
8/26/1988	1,600	-	-	-	-	-	-	-	-	-	-	-	-
1/18/1989	< 1,000	-	6.3	ND	12	-	-	-	-	-	-	-	-
4/24/1989	< 1,000	-	ND	ND	7.7	-	-	-	-	-	-	-	-
2/21/1990	300	-	ND	0.3	1.5	-	-	-	-	-	-	-	-
6/10/1992	76	ND ^a ; ND ^e	ND	ND	ND	-	-	-	-	-	-	-	-
6/10/1993	-	9,100 ^b ; 6,200 ^d	ND	ND	ND	-	-	-	-	-	-	-	-
9/24/1993	< 50	ND ^a ; ND ^e	ND	ND	ND	-	-	-	-	-	-	-	-
9/29/1993	220	-	ND	ND	ND	-	-	-	-	-	-	-	-
12/10/1998	180	ND ^a ; ND ^b ; 95 ^d ; ND ^e	ND	ND	ND	-	-	-	-	-	-	-	-
12/14/1999	100	-	-	-	-	-	-	-	-	-	-	-	-
11/12/2003	1,400	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
3/12/2004	330	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
6/15/2004	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
CW-1													
11/12/2003	85	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
3/12/2004	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
6/15/2004	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
CW-2													
11/12/2003	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
3/12/2004	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
6/15/2004	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
CW-3													
11/12/2003	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	5.1 (TCE)
3/12/2004	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50
6/17/2004	< 50	-	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 5.0	< 10	< 5.0	< 5.0	< 5.0	< 0.5 - < 50

Notes:

Most recent concentrations are in Bold

Non-detectable concentrations noted by the less than sign (<) followed by the laboratory reporting limit or "ND".

NA indicates the data is not available.

"-" indicates not tested

^a = TPH-d, ^b = TEPH (non-diesel), ^c = TPH-g, ^d = TPPH (non-gasoline); ^e = Kerosene

* indicates a grab sample

TABLE THREE
Wells Located Within 1/4-Mile Radius of
1001 42nd Street, Oakland, California

Well Number	Well Address or Location	Well Owner and Address	Well Type	Well Screen Interval	Year Drilled
1-3	989 41st Street, Oakland	California Linen, 989 41st Street, Oakland, CA	Monitoring	7-22', 8-23' & 7-21.5'	1989
4	899 40th Street, Oakland	Toscani Bakerey, 899 40th Street, Oakland, CA	Unknown	58-108	1928
5	Market Street and Apgar Street, Oakland	Pacific Gas & Electric, 4801 Oakport Street, Oakland, CA	Cathodic Protection	NA	1974
6	1077 41st Street, Oakland	Mayborn Property, 4098 San Pablo Ave, Emeryville, CA	Destruction	Cement 0-20' Pea gravel 20-65',	1991
7	44th Street, 41' SE of Adeline	Pacific Gas & Electric, 4801 Oakport Street, Oakland, CA	Cathodic Protection	NA	1973
8-12	1007 41st Street, Oakland	Green City Development Group, 3675 Del Monte Ave, Oakland, CA 94605	Monitoring	Approx 13.5' Depth	1993
Not Mapped	45th Street, Emeryville	Presto-Lite Company, 45th Street, Emeryville, CA	Unknown	393' Depth - Screen interval not known	1908

APPENDIX A

April 2, 2004 Letter from the ACHCSA

ALAMEDA COUNTY
HEALTH CARE SERVICES

AGENCY

DAVID J. KEARS, Agency Director



April 2, 2004

Mr. Edward Kozel
20 Oak Knoll Drive
Healdsburg, CA 95448

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

Barney M. Chan
HAZARDOUS MATERIALS SPECIALIST

Dear Mr. Kozel:

Subject: Fuel Leak Case RO0000079, 1001 42nd St., Oakland, CA 94608, Oakland National Engravers (ONE)

Alameda County Environmental Health staff has reviewed the case file for the subject site including the April 30, 2003 *Block Environmental Services (BES) Response to Technical Comments*. We find that the response report does not adequately address our March 24, 2003 letter's concern and request that you address the following additional technical comments and submit the technical reports requested below.

TECHNICAL COMMENTS

Business and Professional's Code

1. The reports for this site submitted from your consultant are not signed and stamped by an appropriate registered professional and are not acceptable for submittal to this office. Pursuant to sections 6735, 7835, and 7835.1 of the California Business and Professions Code, all work and reports which require geologic or engineering evaluations or technical judgments must be performed under the direction of a California Professional Civil Engineer, Certified Engineering Geologist, Registered Geologist, or Certified Hydrogeologist. Submittals requiring registration include:
 - 1.1 All reports that involve geologic or engineering evaluations and judgments
 - 1.2 All proposals and reports for subsurface investigations. These include, but are not limited to, soil borings, monitoring wells, soil-vapor probes, and trenching to retrieve soil/groundwater samples.
 - 1.3 Quarterly monitoring reports that offer, or are required to provide, interpretation of data, conclusions, or recommendations.
 - 1.4 All proposals and reports concerning interim or final remedial actions.

Please note all proposals and reports submitted to this office must be accompanied by a cover letter from the responsible party which states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached proposal or report is true and correct." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports submitted for this fuel leak case.

We request that you submit a summary report of your work, signed and stamped by the appropriately registered professional. Regarding the April 30, 2003 letter report, we do not find the technical arguments compelling and the report is not signed and stamped by an appropriate registered professional, and it is rejected

Quarterly Groundwater Monitoring

2. Groundwater monitoring has been performed at your site intermittently; in 1991, 1993, 1994, 1998, 1999 and 2000, and in most cases only once per year. We consider this insufficient data upon which to demonstrate a concentration trend. We request that you initiate quarterly groundwater sampling immediately. We further request that ONE and the former Dunne Quality Paints (1007 41st St.) commence with coordinated groundwater monitoring during the Second Quarter 2004. Coordination is important to obtain data on water levels and contaminant concentrations at the two sites on the same day. If *coordination is not performed, the accuracy of evaluations of plume extent and determinations of commingling could be seriously compromised.* Coordination is also important to monitor the changes in groundwater gradient magnitude and direction that can be induced by remedial activities occurring at the sites. Maps and data tables, included with the quarterly monitoring reports for each site, are to include data from wells from both sites.

Site Characterization/Observations

3. The site has not been adequately characterized. The lateral and vertical extent of source locations and dissolved plumes has not been defined. Since the site has not been adequately characterized, a risk-based evaluation is premature at this time.

In regards to the 10k diesel UST removed from the loading dock in 1987, monitoring well LD4 installed near this UST, possibly within the former tank pit, reported 630,000 ppb TPHms in the last monitoring event, 1/2000. This concentration of mineral spirits represents free product, which must be removed to the extent possible. The source of the release is not well understood nor is the extent of the free product or the dissolved product plume

The former 8k gallon UST closed-in-place in the sidewalk on 41st St. in May 1993 has not been adequately investigated. The contents of this tank consisted of methylene chloride and xylenes in addition to stoddard solvent. The piping run to the tank was observed to have obvious holes. The piping run leading towards the building and property is not shown, nor understood. The sump, located 20 feet northeast of the UST may have been the source of the trench water, found entering the tank pit from beneath the adjacent building. This water sample detected 24,000 ppb TPH (total purgeable hydrocarbons). Therefore, the tank pit area appears to have been impacted by the leaks in the piping and leaks from the sump/trench. The well installed immediately down-gradient of the tank, MW-1, detected free product in 1988. After MW-1 was destroyed, well MWB-1 was installed slightly west of the tank pit, adjacent to a residence, as its replacement. In 9/93, the last time this well was sampled, 43,000 ppb TPHms was detected. This well should be located and redeveloped prior to sampling. Although gradient is in question, a slight northwest gradient could cause the petroleum plume and/or free product to migrate offsite beneath private residences. The incomplete preferential pathway/sensitive receptor survey, (see comment 4), leaves this potential threat unevaluated.

The two sumps located in the loading dock area were closed in April 1994. Monitoring well BES-1, located between the two sumps, initially reported 18,000 ppb TPHd and 12,000 ppb TPHms. A soil sample collected from 8' bgs next to the sumps reported 1400

ppm TPHms, 0.013 ppm TCE, 0.053 ppm cis-DCE and 0.044 ppm trans-DCE. Contrary to your consultant's conclusion, it appears that the sumps have leaked. The last monitoring of BES-1 on 12/99 detected 72,000 ppb TPHms. The extent of this plume and its relationship to the other plumes is currently unknown. Also, please confirm that these sumps are the same sump referenced in the May 1993 UST closure in-place. We request that you submit your proposal for plume definition in the work plan requested below.

The locations of monitoring wells MW-B2 through MW-B4 are not conducive for gradient determination because they are virtually linear, not triangular. With the exception of MW-B4, these wells are not located near the source areas. Additionally, the use of groundwater elevation readings from well LD4 is suspect since the well is located within the former tank pit. In fact, the reliability of the site's gradient is questionable due to the poor array of wells. The wells installed at the former Dunne Paints site located on the south side of 41st St. are also installed within the former tank pits, therefore gradient determination using these wells is also suspect.

The four hydropunches drilled in December 1999 and January 2000 provided some information but not enough to conclude that the extent of the petroleum plume(s) has been defined. It is unreasonable to assume that three hydropunch borings could characterize the plumes from the ONE site. Hydropunch HP-1 groundwater results of 21,000 ppb TPHms was collected on December 14, 1999, while HP-1 collected on December 15, 1999 reported <50 ppb. Your consultant explained this as a possible result of cross-contamination. This scenario is extremely unlikely. Cross-contamination would cause a low concentration sample to have slightly higher concentrations but not the extremely high concentration observed in the December 14th sample. Because of the extensive investigation performed on the former Dunne Paints site, we now know that there are buried and/or meandering stream channels beneath the Dunne site and vicinity. This preferential pathway allows plume migration and contaminant detection in this discrete channel. The elevated water sample in HP-1 was likely from this gravel channel. We request that you propose investigation sufficient to evaluate the likelihood of plumes originating from your site encountering buried stream channels in the area. Please include this proposal in the work plan requested below.

Preferential Pathway Study

4. Our office has reviewed the BES, December 2000 report, which is referenced to contain a preferential pathway and sensitive receptor survey. The referenced report does not include a utility survey or a ¼ mile well survey with the exception of those wells of the immediate former Dunne Paints and California Linen. We request that you perform a preferential pathway study that details the potential migration pathways and potential conduits for horizontal and vertical migration in the vicinity of your site. The utility survey should include map(s) and cross-sections showing the location and depth of all utility lines and trenches. A survey of nearby residences should be done to identify any homes with basements. The well survey should locate wells (all types) within a ¼ mile radius of the site. Show the locations of the wells and the site on a map. List well construction details for each well. Report your results in the work plan requested below.

Risk Assessment

5. The risk assessment performed for the site does not address residual TPHms because it states there is no surrogate chemical with comparable properties to it. Our office recommends comparing current soil, groundwater and vapor concentrations with Environmental Screening Levels (ESLs) in the SFRWQCB July 2003 document to determine if there is potential human health or environmental risk. The prior air samples are not considered appropriate samples. Air sampling was done at three locations using a flux chamber. One sample was in the former Dunne Solvent Mixing Room and the other two were within and outside the Office and Printing Building at ONE. Our office has several observations to this investigation. Though the use of a flux chamber is permitted, guidance documents from the LARWQCB and DTSC recommend soil gas sampling via shallow gas probes. The soil gas samples should be taken at locations where contamination would be likely present. To the contrary, the locations sampled in this investigation were not near the source areas or near sensitive receptors. Results from the flux chamber may yield false positive results due to the presence of ambient vapors. This may be the case in the sample taken from the Solvent Mixing Room. After site characterization is complete you should perform your risk assessment. At that time, please determine if a soil vapor sampling work plan is necessary.

Maps Inaccurate

6. The figure and site map provided to our office are inaccurate. They are not consistent with the descriptions given in the reports. MW-LD4 suspected as being installed within the tank backfill of the UST removed in 1987 is depicted as being approximately 50 feet from the UST in Figure 2 of the BES March 2000 report. Please correct this information and resubmit a corrected map.

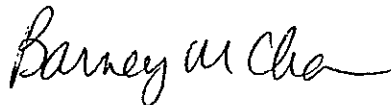
TECHNICAL REPORT REQUEST

- April 19, 2004- Written response to this letter, summary report including corrected figure/site map signed and stamped by an appropriate registered professional.
- May 7, 2004- Work Plan for site characterization and results of your preferential pathway study.
- May 15, 2004- 2nd Quarter 2004, Quarterly Groundwater Monitoring Report
- August 15, 2004- 3rd Quarter 2004, Quarterly Groundwater Monitoring Report
- November 15, 2004- 4th Quarter 2004, Quarterly Groundwater Monitoring Report
- February 15, 2005- 1st Quarter 2005, Quarterly Groundwater Monitoring Report
- 60 days after work plan approval- Soil and Groundwater Investigation Report
- 60 days after completion of Soil and Groundwater Investigation- Risk Assessment and Soil Vapor Sampling work plan, if necessary.

Mr. Edward Kozel
RO0000079
April 2, 2004
Page 5

You may contact me at (510) 567-6765 if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Barney M. Chan". The signature is written in a cursive, flowing style.

Barney M. Chan,
Hazardous Materials Specialist

C: B. Chan, D. Drogos

Ms. Kim Kraft, ONE Color Communications, 1001 42nd St., Oakland, CA 94608

Mr. Martin Samuels, Green City Development Group, 3675 Del Monte Ave., Oakland, 94608

Mr. Jon Rosso, Clayton Group Services, 6920 Koll Center Parkway, Suite 216, Pleasanton,
CA 94566

Mr. Donald Miller, California Linen, 989 41st St., Oakland, CA 94608

ONE 4_2_04

APPENDIX B

EBMUD Utility Line Maps

mmmm



1485 000
492 000
490 000
1488 000

1482 B 490

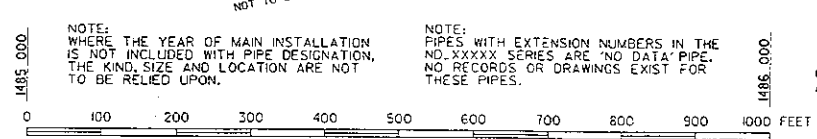
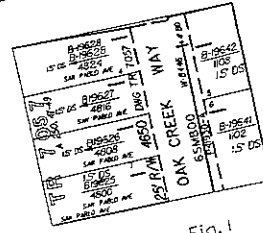
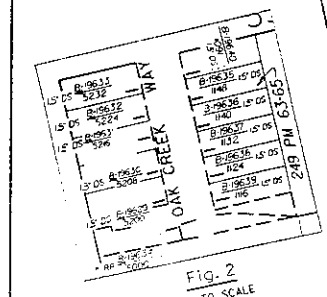
1485 B 492

1487 000

492 000

1488 B 490

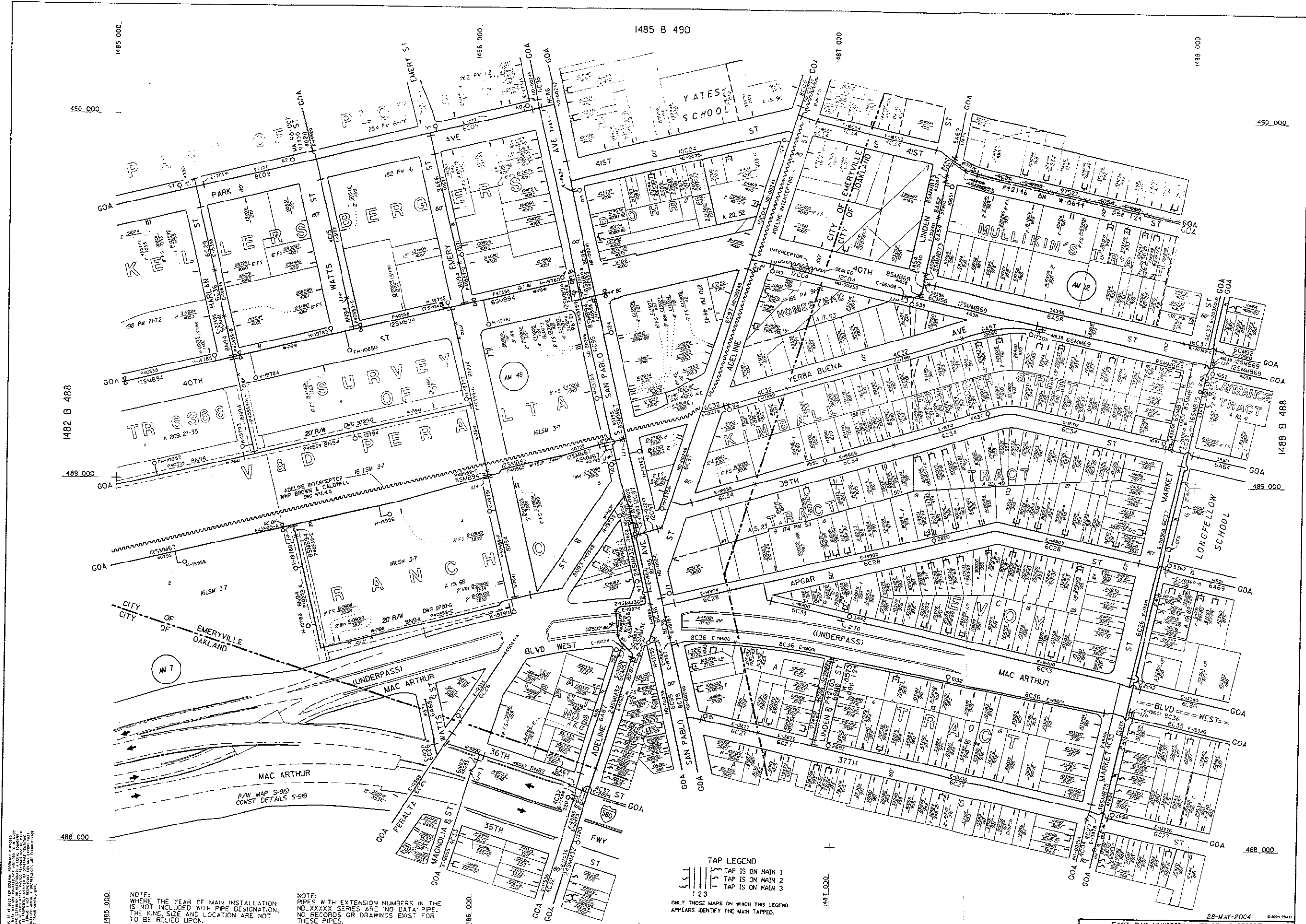
490 000



1485 B 488

EAST BAY MUNICIPAL UTILITY DISTRICT									
CITY	STRUCTURE	DESIGNATION	NAME	IN. DIA.	CAP. IN M.G.	PRESSURE ZONE	DATE ISSUED	AUG 2003	
OAKLAND-EMERY						GOA CENTRAL			
COUNTY ALAMEDA									
U.S.C.S. OAKLAND WEST									

18-MAY-2004
1485B490

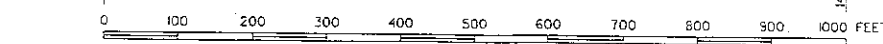


SEE MAP 5 TO 14 FOR SECTION REFERENCE. THESE MAPS ARE THE PROPERTY OF THE DISTRICT AND ARE NOT TO BE REPRODUCED OR COPIED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF THE DISTRICT. THE DISTRICT ASSUMES NO LIABILITY FOR ANY ERRORS OR OMISSIONS ON THIS MAP.

NOTE: WHERE THE YEAR OF MAIN INSTALLATION IS NOT INCLUDED WITH PIPE DESIGNATION, THE KIND, SIZE AND LOCATION ARE NOT TO BE RELIED UPON.

NOTE: PIPES WITH EXTENSION NUMBERS IN THE NO. XXXXX SERIES ARE "NO DATA" PIPE. NO RECORDS OR DRAWINGS EXIST FOR THESE PIPES.

TAP LEGEND
 1 TAP IS ON MAIN 1
 2 TAP IS ON MAIN 2
 3 TAP IS ON MAIN 3
 ONLY THOSE MAPS ON WHICH THIS LEGEND APPEARS IDENTIFY THE MAIN TAPPED.

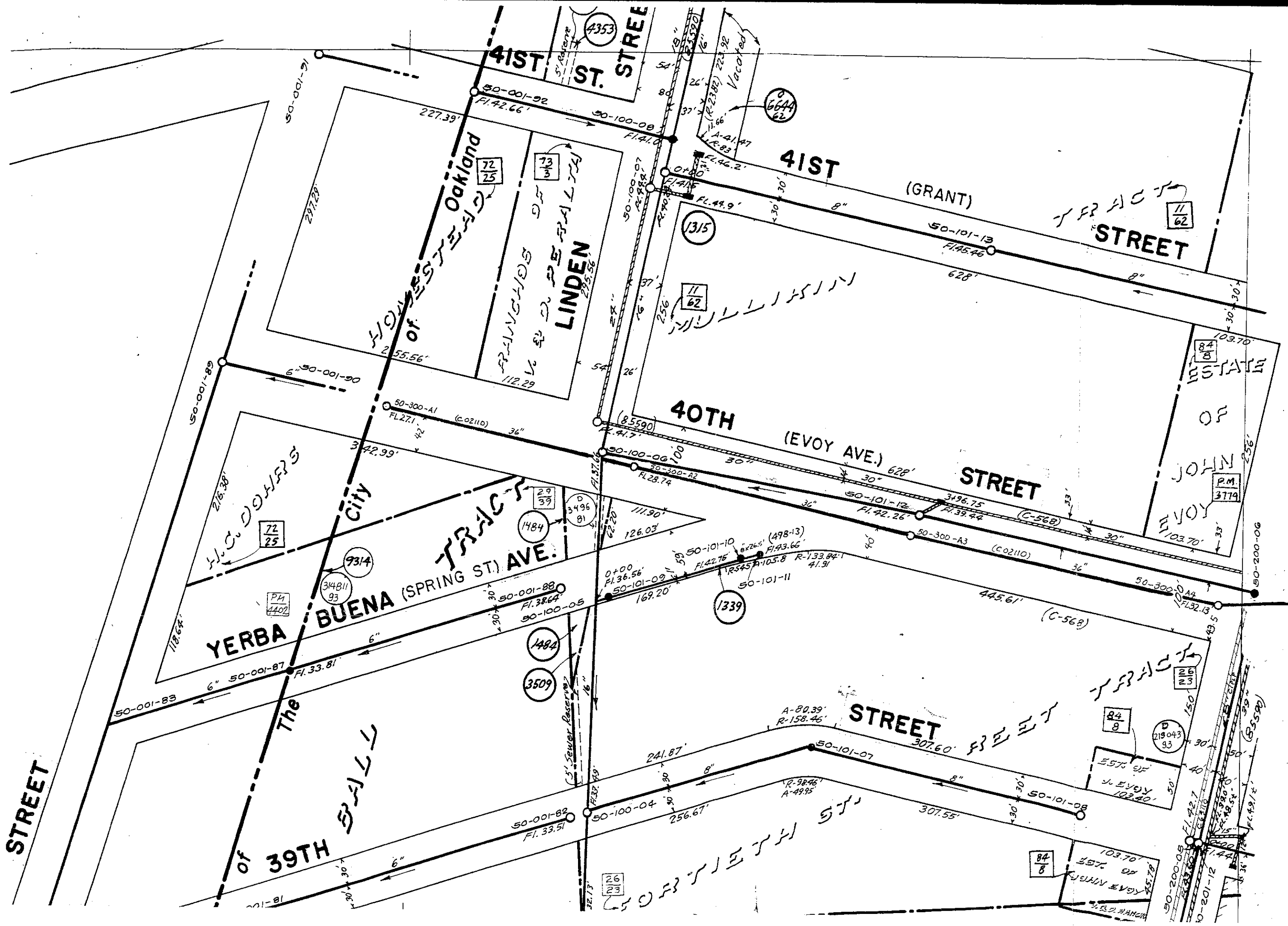


EAST BAY MUNICIPAL UTILITY DISTRICT									
CITY	EMERYVILLE-OAK	STRUCTURE	DESIGNATION	NAME	CL. NO.	CAP. IN M.G.	PRESSURE ZONE	DATE ISSUED	28-MAY-2004
COUNTY	ALAMEDA						GOA CENTRAL		AUG 2003
U.S.C.S.	OAKLAND WEST								202
1485B488									



LEGEND

- SANITARY SEWER
- STORM CONDUIT
- FLOW MONITOR
- MANHOLE
- LAMPHOLE





45TH STREET

(Ord. 2254 BK 3 P.181) (401-8)

44TH STREET

(Ord. 2254 BK 3 P.181) (401-8)

43RD STREET

(Ord. 2254 BK 3 P.181) (401-8)

42ND STREET

(Ord. 2254 BK 3 P.181) (401-8)

CITY
LINDEN

Abolished

BOUNDARY LINE

41ST (GRANT)

(Ord. 9282 BK 3 P.58) (401-12)

(Ord. 1195 N.9 BK 8 P.14)

(Ord. 1195 N.9 BK 8 P.14)

35CH

242

241

35/D

58.73

55.72

59.47

59.57

59.47

59.37

56.93

56.90

57.12

57.81

55.51

55.44

56.62

56.48

53.66

52.60

53.27

4987

52.76

52.47

30'

80'

80'

130'

80'

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130'

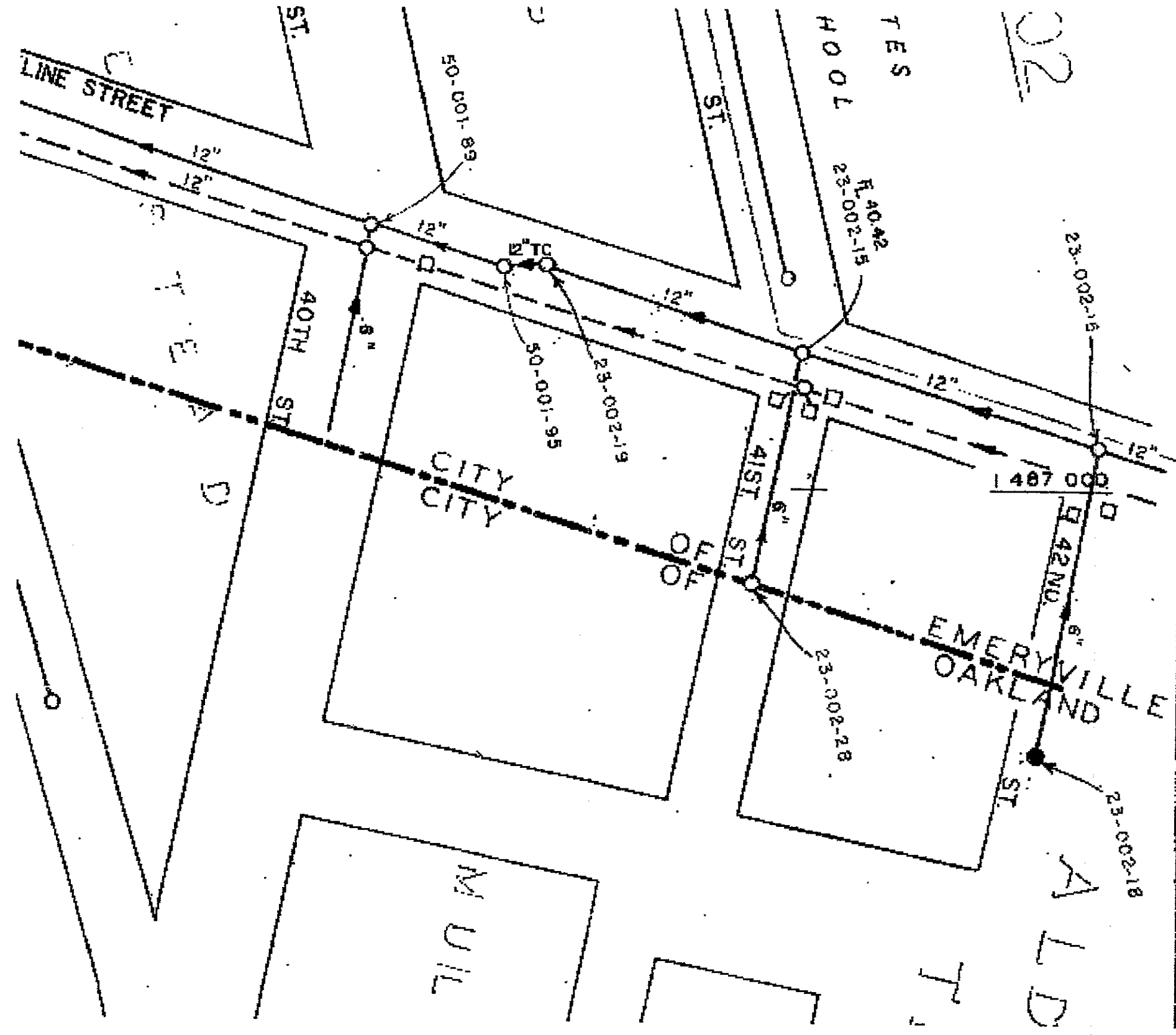
80'

130'

80'

130'

02



TES
HOO L
F 4042
23-002-15

50-001-89

23-002-15

12" TC

50-001-95

23-002-19

1487 000

CITY CITY

41ST ST

EMERYVILLE
OAKLAND

42ND ST

23-002-28

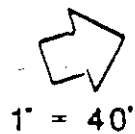
23-002-18

ALD

M U L L

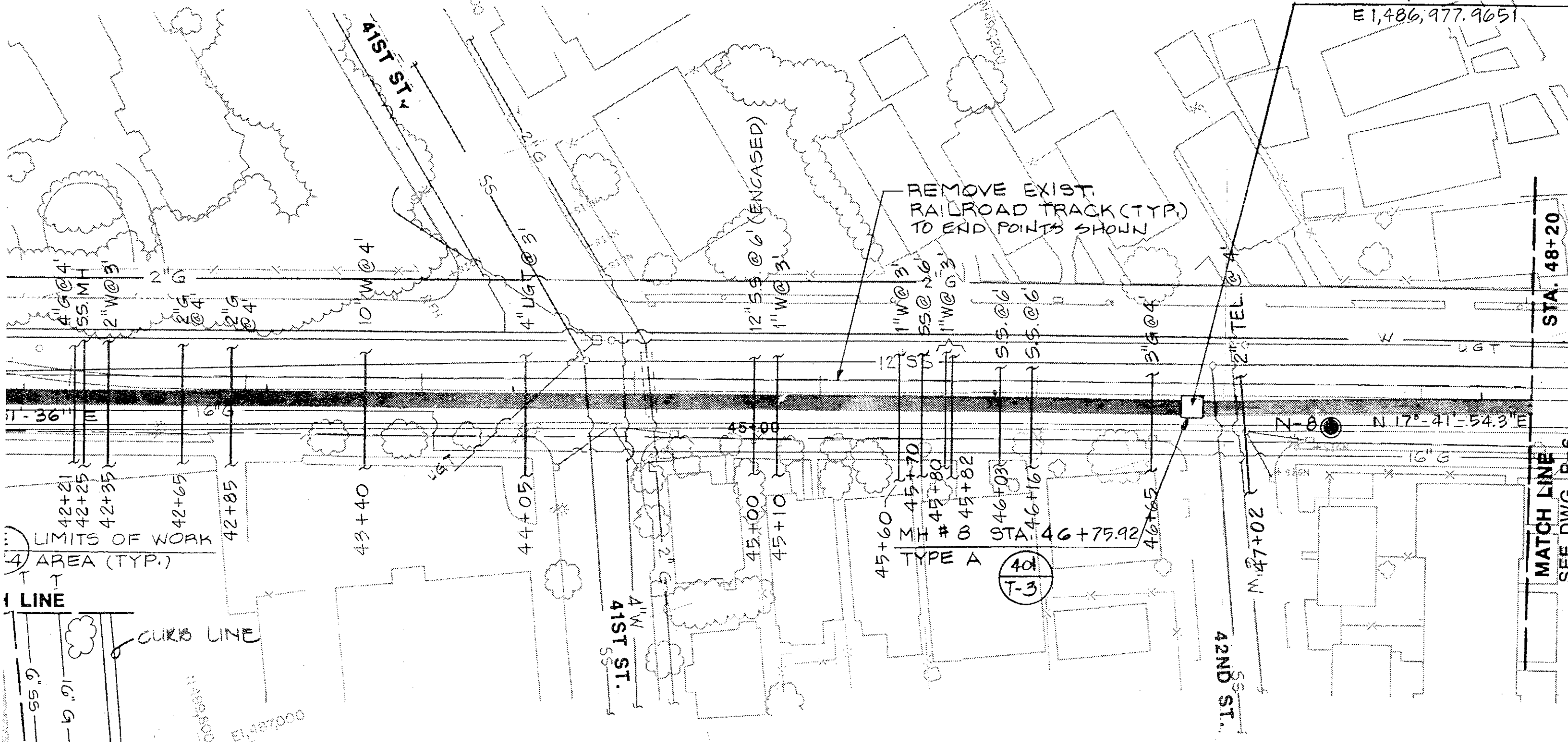
T

00 ± 36" φ RCP-PL FROM
 STRUCTURE B EASTERLY
 STREET AS INDICATED @ S = 0.0090
 THIS PIPE IS 1820 LBS/LF



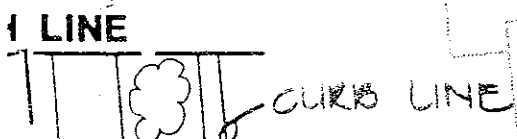
E1486,800

STA 46+75.92
 PI N490,229,2095
 E1,486,977.9651



REMOVE EXIST.
 RAILROAD TRACK (TYP.)
 TO END POINTS SHOWN

LIMITS OF WORK
 AREA (TYP.)



PLAN

TERMINATED AND SEALED PER 490
T-4

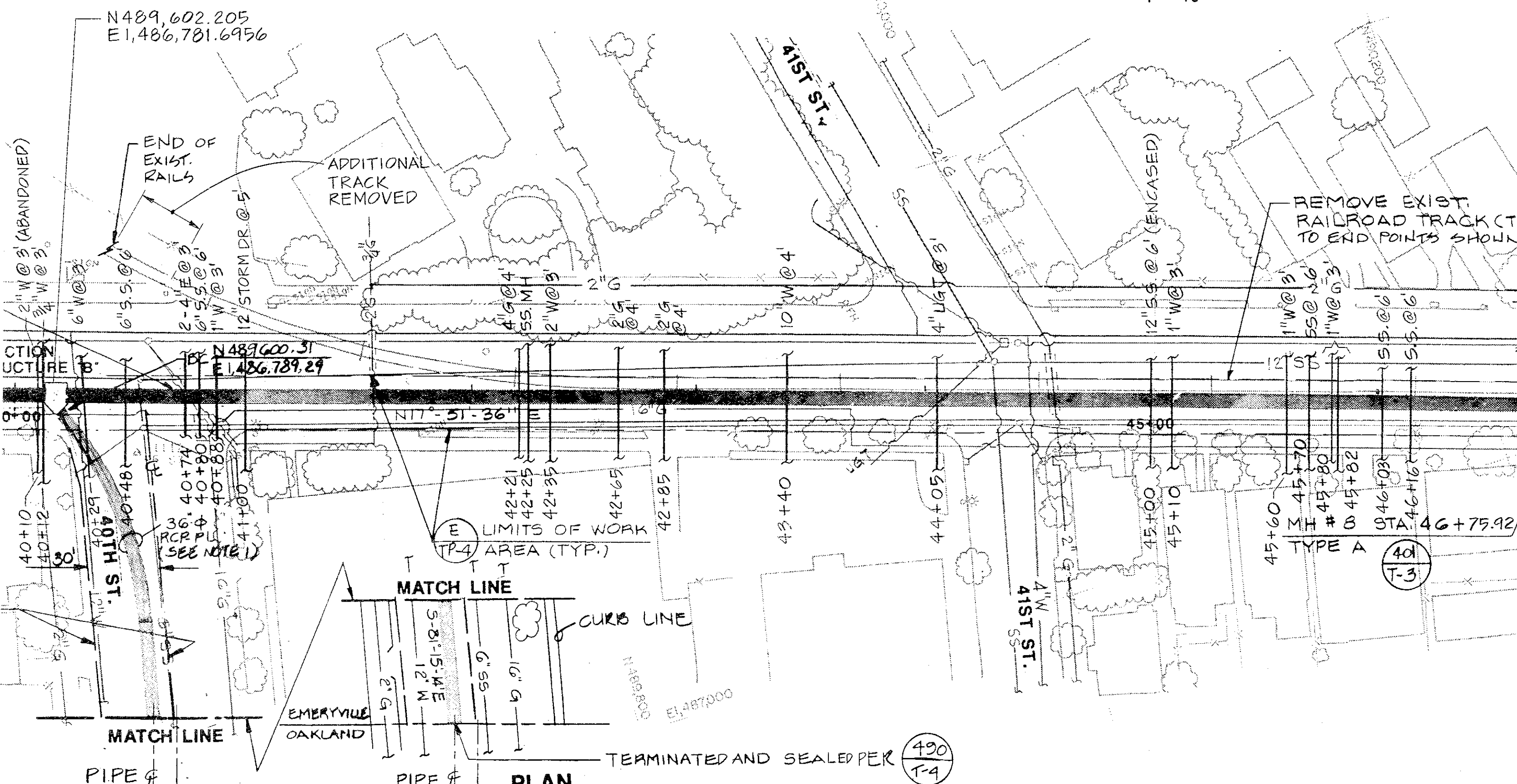
STA. 48+20

MATCH LINE
 SEE DWG. P-6

Adeline

NOTE 1: INSTALLED 200 ± 36" φ RCP-PL FROM JUNCTION STRUCTURE B EASTERLY ALONG 40TH STREET AS INDICATED @ S=0.0090 D-LOAD FOR THIS PIPE IS 1820 LBS/LF

1" = 40'

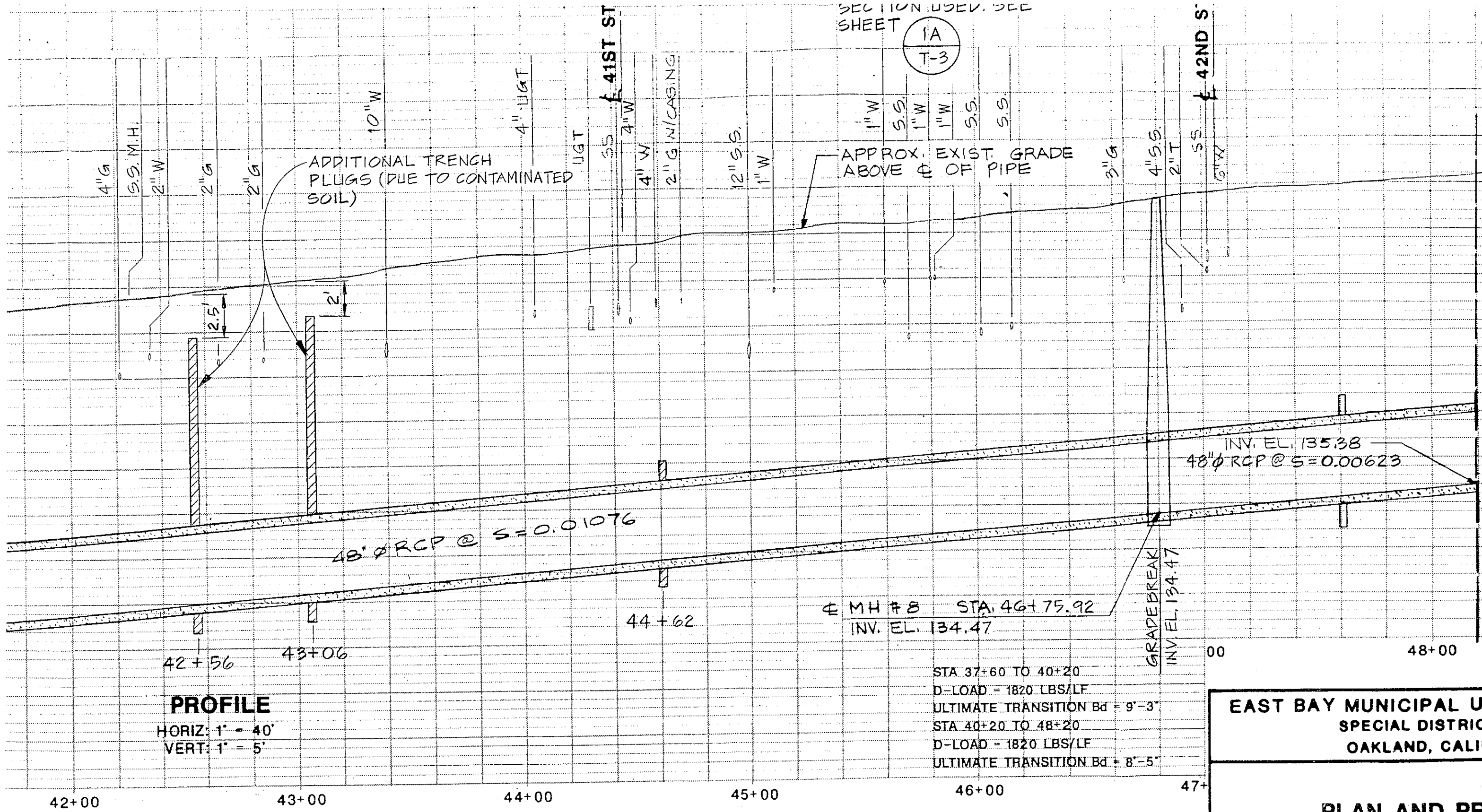


PLAN

490
T-9

SECTION USED. SEE SHEET

1A
T-3



PROFILE
HORIZ: 1" = 40'
VERT: 1" = 5'

STA 37+60 TO 40+20
D-LOAD = 1820 LBS/LF
ULTIMATE TRANSITION Bd = 9'-3"
STA 40+20 TO 48+20
D-LOAD = 1820 LBS/LF
ULTIMATE TRANSITION Bd = 8'-5"

**EAST BAY MUNICIPAL UT
SPECIAL DISTRICT
OAKLAND, CALIF**

PLAN AND PRO

STA. 37+60 TO STA.

BUILT	INSP.	RW	
ION	BY	REC.	APP.

**WET WEATHER PROGRAM
ADELINE STREET INTERCEPTOR**

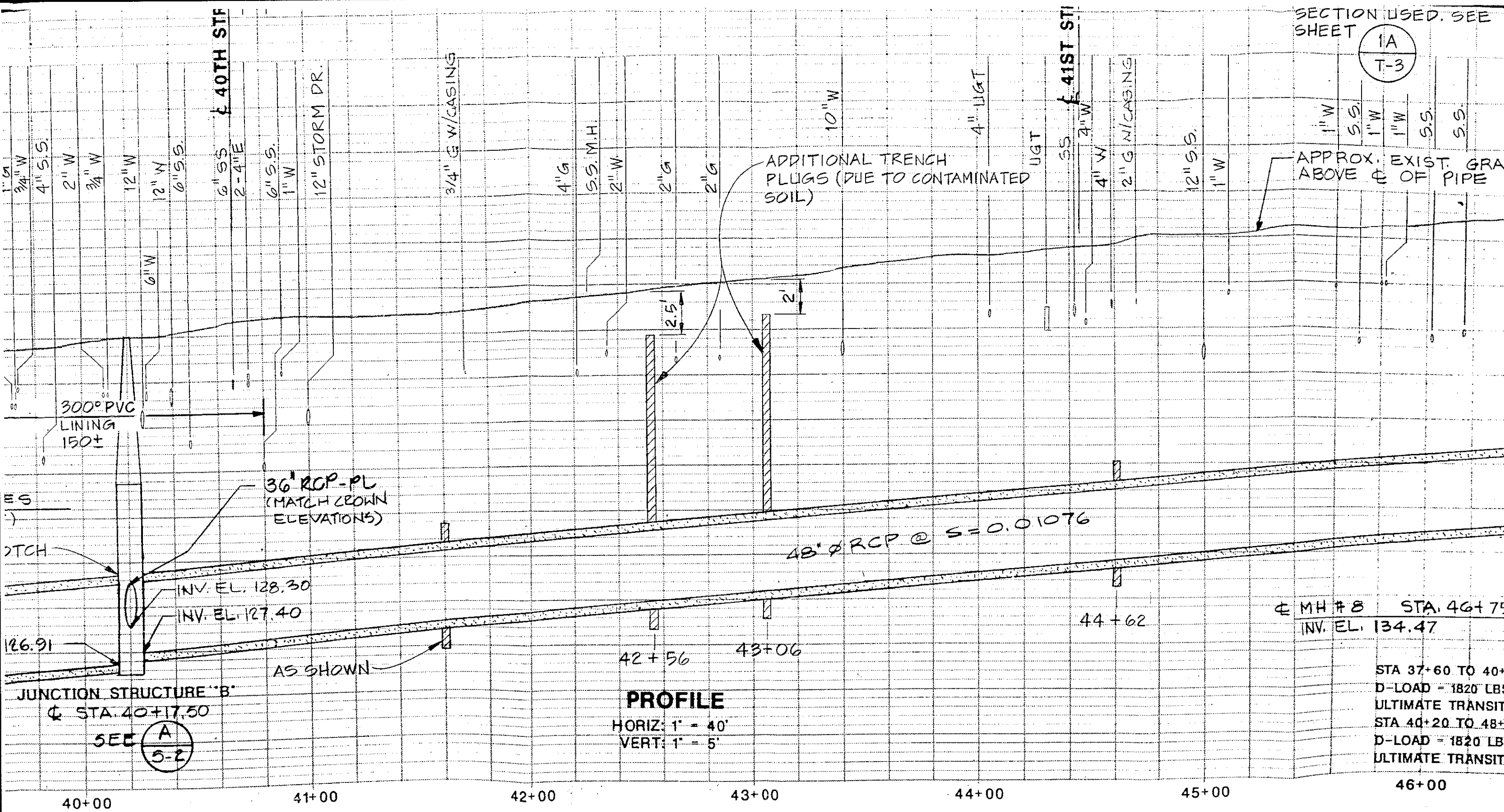
DESIGNED BY	RLS/PF
DESIGN CHECKED BY	TDH
DRAWN BY	JCE
SR. PROJ. ENGR.	WL
APPROVED	
PRINCIPAL-IN-CHARGE, R.P.E. NO. C	

EBMUD	PROJECT ENG. R.P.E. No. C44278
	PROJECT MGR. R.P.E. No. C31866 <i>Marilyn M. Campos</i>
	MGR. OF SUPPORT SERVICES R.P.E. No. C30978
	<i>Michael J. Wallis</i>
	MANAGER OF WASTEWATER R.P.E. No. C26855 <i>Walter F. Bishop</i>

DRAWN BY		DRAWING
SCALE	AS SHOWN	
DATE	APRIL 1990	

SECTION USED. SEE SHEET

IA
T-3



300° PVC LINING 150±
 36" RCP-PL (MATCH CROWN ELEVATIONS)
 INV. EL. 128.30
 INV. EL. 127.40
 JUNCTION STRUCTURE "B"
 STA. 40+17.50
 SEE (A) S-2

PROFILE
 HORIZ: 1" = 40'
 VERT: 1" = 5'

MANHOLE # 8 STA. 46+75
 INV. EL. 134.47

STA 37+60 TO 40+20
 D-LOAD = 1820 LBS/FT
 ULTIMATE TRANSITIC
 STA 40+20 TO 48+20
 D-LOAD = 1820 LBS/FT
 ULTIMATE TRANSITIC

AROLLO TANTS
 A JOINT VENTURE

NO.	DATE	REVISION	BY	REC.	APP.
		AS BUILT	RW		

WET WEATHER PROGRAM
ADELINE STREET INTERCEPTOR

DESIGNED BY	RLS/PF
DESIGN CHECKED BY	TDH
DRAWN BY	JCE
SR. PROJ. ENGR.	WL
APPROVED	
PRINCIPAL-IN-CHARGE, R.P.E. NO. C	

PROJECT ENG. R.P.E. No. C44278
 PROJECT MGR. R.P.E. No. C31866
 MGR. OF SUPPORT S. R.P.E. No. C30878
 MANAGER OF WASTE R.P.E. No. C26855
 ERMUD

APPENDIX F

DWR Well Completion Reports
For
Wells Located Within 1/4-Mile of the Site

15/4 N - 2
 15/4 W - 2200 ft.

01-750

LOG OF WELL

Presto-Lite Company,
 45th. Street, Emeryville.

Black adobe -----	8	feet
Cement gravel -----	8 to 12	"
Yellow clay & gravel -----	12 "	52 "
Blue clay & gravel -----	52 "	58 "
Yellow clay & gravel -----	58 "	66 "
Cement gravel -----	66 "	76 "
Yellow clay -----	76 "	92 "
Cement gravel -----	88 "	92 "
Yellow clay -----	92 "	106 "
Cement gravel -----	106 "	112 "
Yellow clay & gravel -----	112 "	120 "
Red cement gravel -----	124 "	130 "
Yellow clay -----	132 "	140 "
Yellow clay & gravel -----	140 "	153 "
Yellow clay -----	153 "	193 "
Cement gravel -----	183 "	196 "
Blue clay -----	196 "	220 "
Blue clay & sand -----	220 "	230 "
Blue hard pan -----	230 "	234 "
White Hard Pan -----	234 "	238 "
Yellow hard pan & rock -----	238 "	266 "
Yellow clay -----	266 "	280 "
Cement gravel -----	280 "	282 "
Yellow clay -----	282 "	293 "
Yellow clay & sand -----	293 "	302 "
Blue clay -----	302 "	304 "
Cement gravel -----	304 "	307 "
Sediment & sand -----	307 "	314 "
Yellow clay, gritty -----	314 "	326 "
Cement gravel -----	326 "	335 "
Yellow clay & grit -----	335 "	358 "
Cement gravel -----	358 "	373 "
Yellow clay, grit -----	373 "	383 "
Cement gravel -----	383 "	398 "
Yellow clay, gritty -----	398 "	408 "

393 feet of 8" No. 14 R. H. Double Casing, no shoe.

Water table 10 feet.

September 1908.

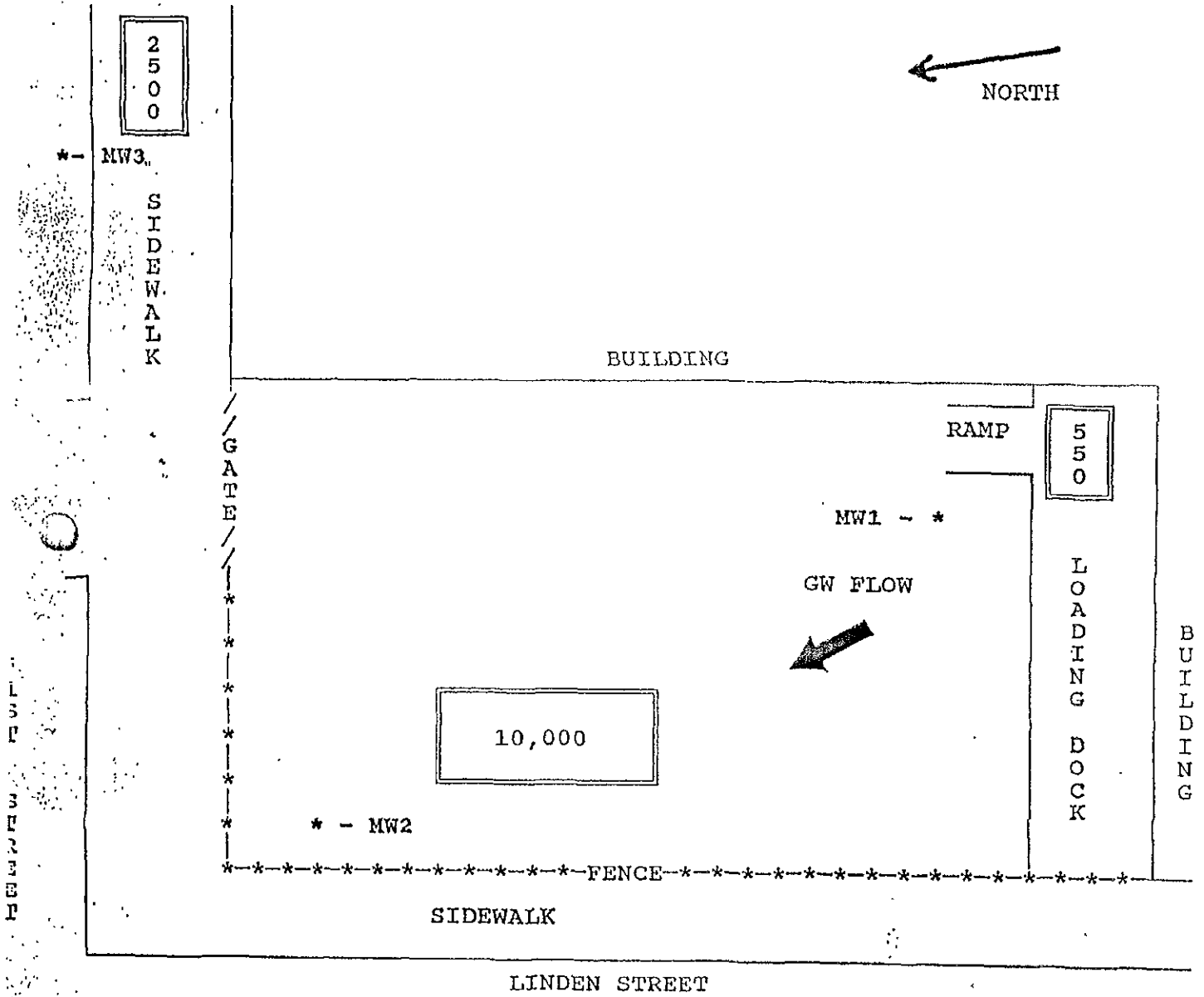
Kinney, driller.
 G. P. Marcus, Contractor.

J. M. Cogh
 1201 - E 12th St.

FIGURE 1

01-445G

SITE PLAN - CALIFORNIA LINEN
989 41st STREET, OAKLAND, CA



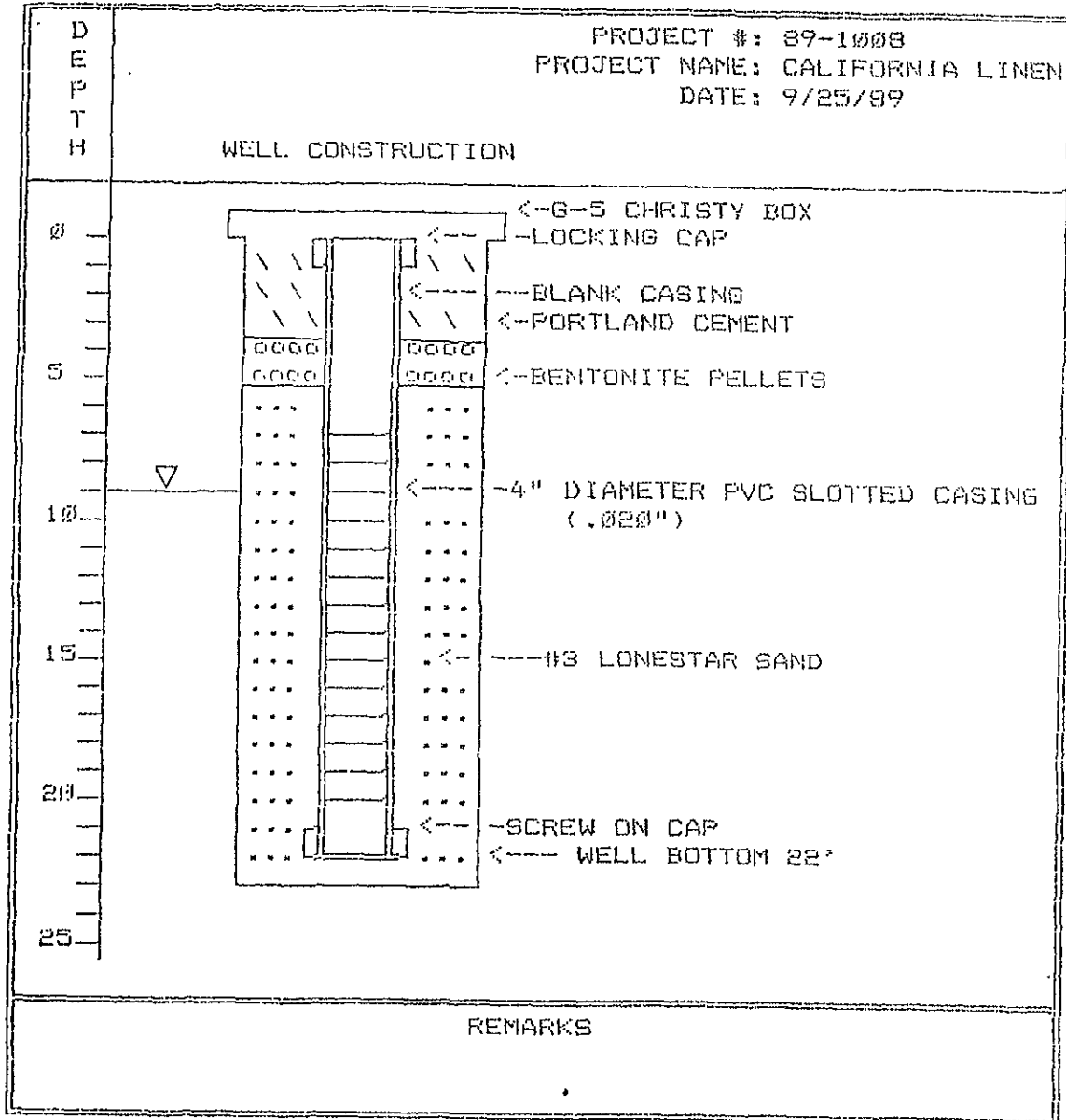
* - Monitoring well location

01-4459

MILLER ENVIRONMENTAL COMPANY

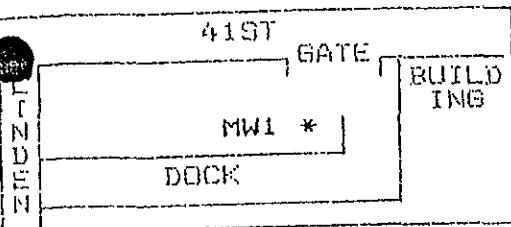
WELL CONSTRUCTION LOG

BORING # MW1



DURING # MW1

PROJECT # 89-1008 PROJECT NAME: CAL LINEN
 LOCATION: 989 41ST STREET, OAKLAND, CA
 LOGGED BY: REINHARD ROHRKE
 CONTRACTOR: REW DRILLING
 DRILLING METHODS: 8 1/4" HOLLOW STEM AUGER
 SAMPLING METHODS: SPLIT SPOON SAMPLER
 START TIME: 9:15 DATE: 9/25/89
 STOP TIME: 12:15 DATE: 9/25/89
 TOTAL DEPTH: 22'



SITE MAP

DEPTH	SAMPLE #	RECOVERY	TIME	BLOWS	DESCRIPTION	UCCS	SYMBOL
0					ASPHALT DARK GRAY TO BLACK PEBBLY, SLIGHTLY SILTY CLAY; ORGANIC SMELL; STIFF.		
5	MW1A	18"	9:35	4-8-12	OLIVE GREEN-GRAY CLAY; SLIGHTLY OXIDIZED. OLIVE-GREEN PEBBLY CLAY; STIFF; MOIST.	CL	
10	MW1B	18"	9:45	6-9-11	LIGHT BROWN SILTY CLAY; WET.	CL	▽
15							
20							
25					END OF BORING;		

REMARKS

01-445G

surveyed on October 12, 1989 by a California licensed surveyor. The water levels and conversions to elevations are given in Table 1 below.

TABLE 1
WATER LEVEL DEPTHS AND ELEVATIONS IN FEET. OCT 11, 1989

<u>Well</u>	<u>TOC Elev.</u>	<u>Depth</u>	<u>Elevation</u>
→ MW1	53.89	7.70	46.19
MW2	54.06	9.25	44.81
MW3	52.79	7.00	45.79

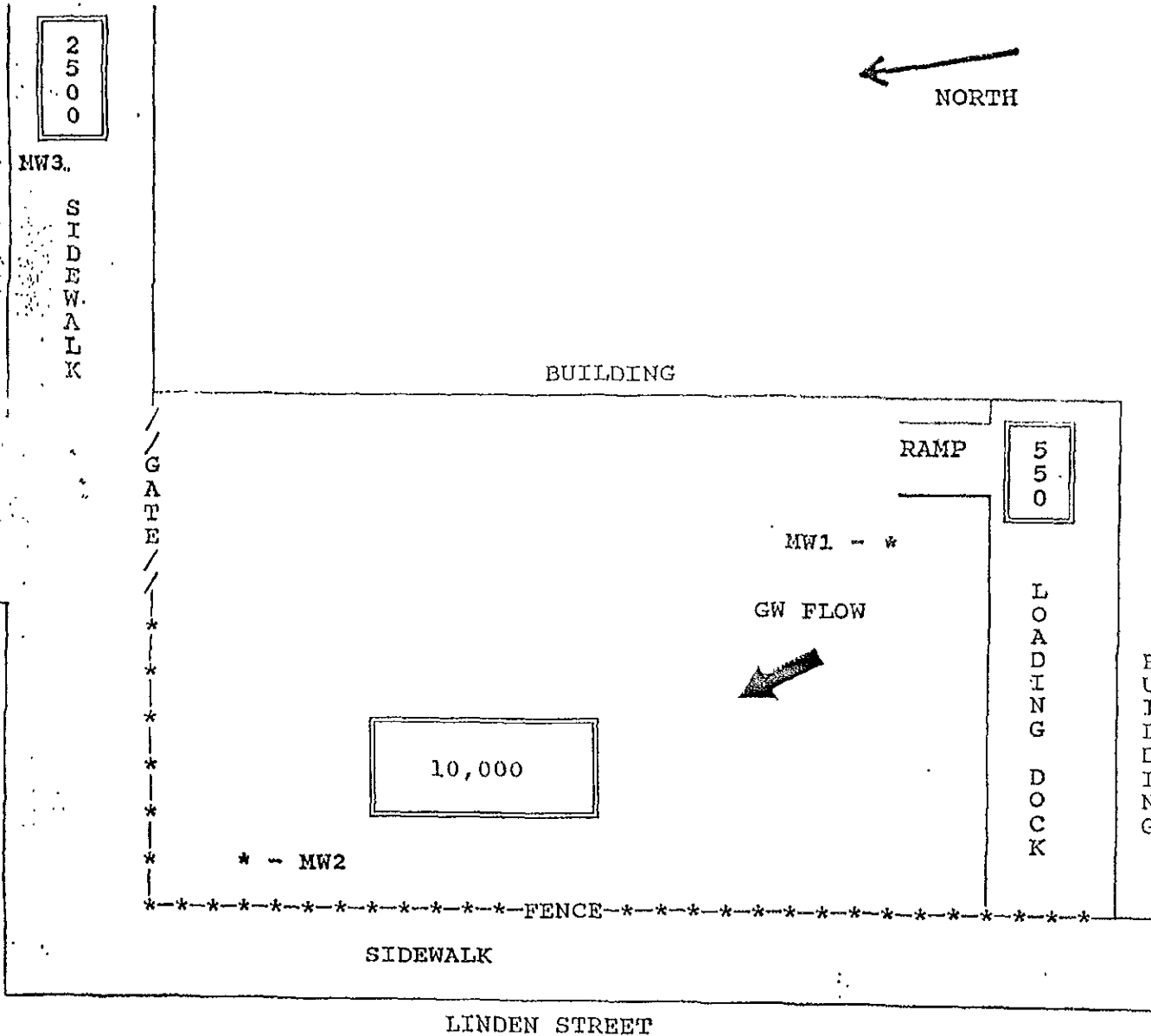
TOC=Top of casing

Based on the present data ground water is flowing in a north-northwest direction towards the intersection of 41st and Linden Streets. This data is shown on Figure 1.

FIGURE 1

01-445H

SITE PLAN - CALIFORNIA LINEN
989 41st STREET, OAKLAND, CA

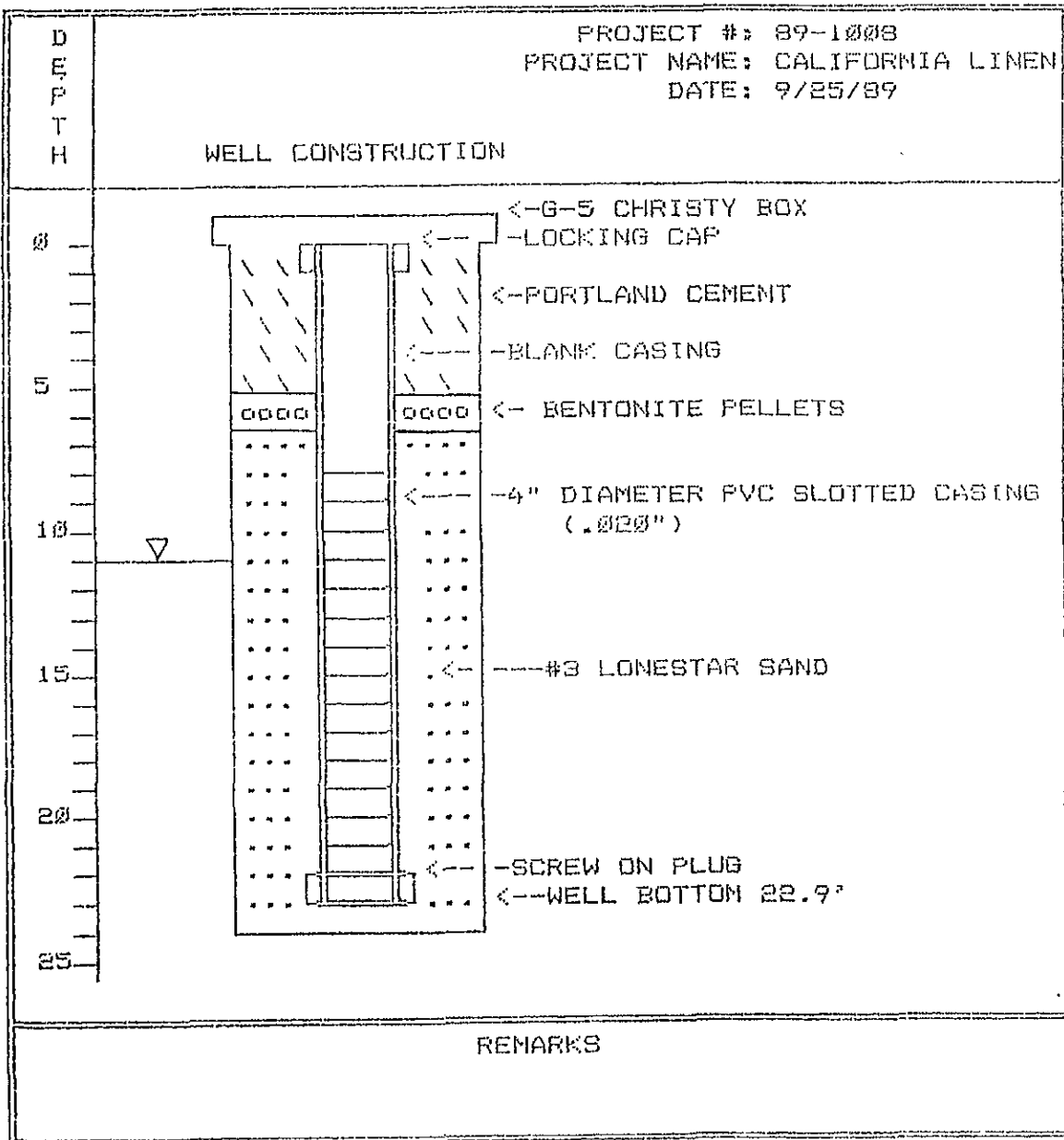


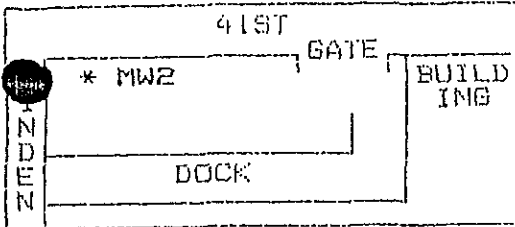
* - Monitoring well location

MILLER ENVIRONMENTAL COMPANY

WELL CONSTRUCTION LOG

BORING # NW2





PROJECT # 89-1008 PROJECT NAME: CAL LINEN
 LOCATION: 989 41ST STREET, OAKLAND, CA
 LOGGED BY: REINHARD RUMRE
 CONTRACTOR: HEW DRILLING
 DRILLING METHODS: 8 1/4" HOLLOW STEM AUGER
 SAMPLING METHODS: SPLIT SPOON SAMPLER
 START TIME: 12:30 DATE: 9/25/89
 STOP TIME: 4:00 DATE: 9/25/89
 TOTAL DEPTH: 23"

SITE MAP

DEPTH	SAMPLE #	RECOVERY	TIME	BLOWS	DESCRIPTION	LOGS	SYMBOL
0					ASPHALT		
					BLACK PEBBLY CLAY; STIFF; DRY.		
5	MW2A	18"	12:50	3-4-4	BROWN SILTY CLAY WITH PEBBLES.	CL	
					OLIVE-GRAY SILTY CLAY WITH PEBBLES; STIFF.		
10	MW2B	18"	1:45	3-5-7	LIGHT BROWN SILTY CLAY; WET.	CL	▽
15					MORE DENSE		
20							
25					END OF BORING;		

REMARKS

01-445H

surveyed on October 12, 1989 by a California licensed surveyor. The water levels and conversions to elevations are given in Table 1 below.

TABLE 1
WATER LEVEL DEPTHS AND ELEVATIONS IN FEET. OCT 11, 1989

<u>Well</u>	<u>TOC Elev.</u>	<u>Depth</u>	<u>Elevation</u>
MW1	53.89	7.70	46.19
→ MW2	54.06	9.25	44.81
MW3	52.79	7.00	45.79

TOC=Top of casing

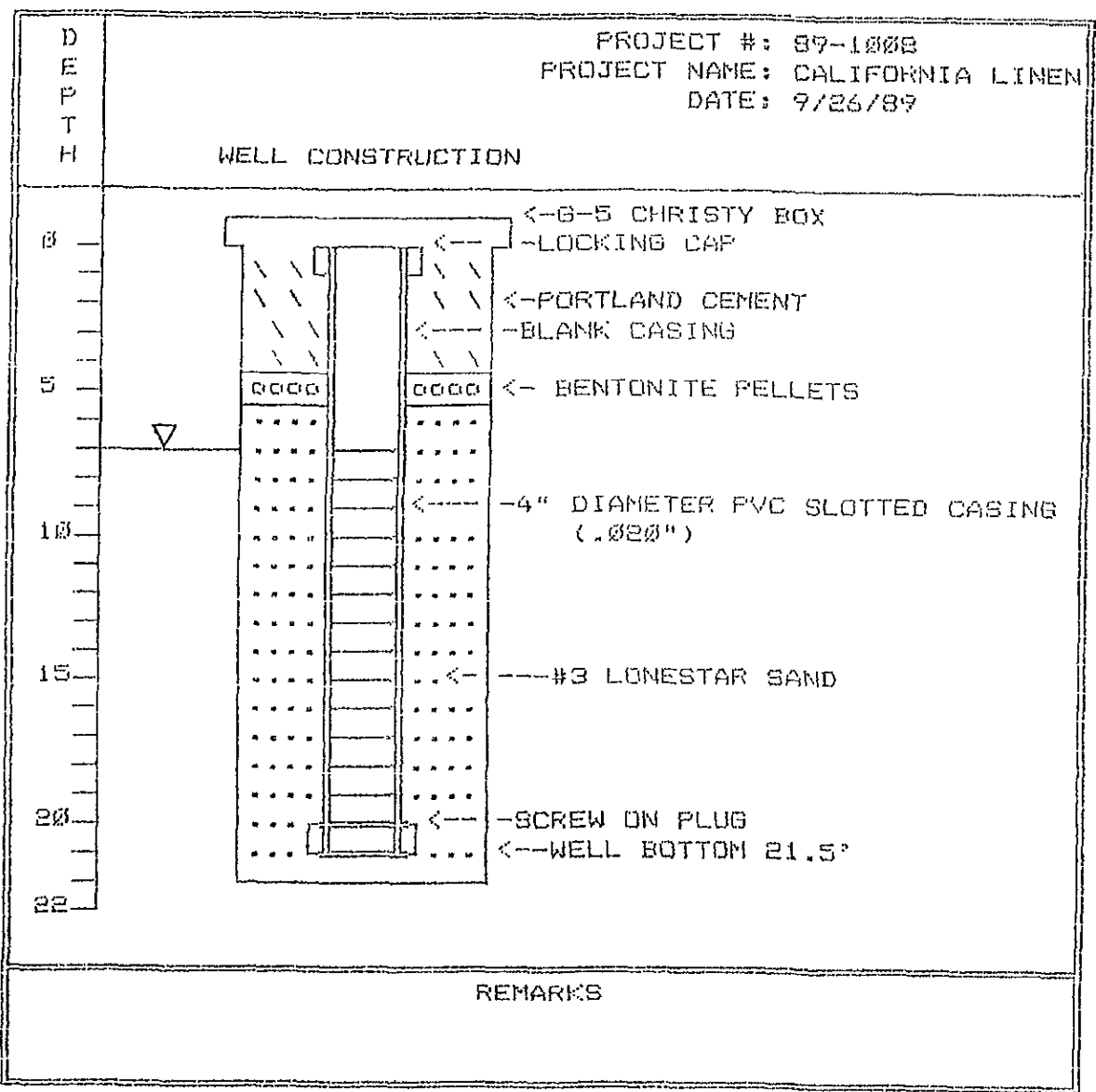
Based on the present data ground water is flowing in a north-northwest direction towards the intersection of 41st and Linden Streets. This data is shown on Figure 1.

01445F

MILLER ENVIRONMENTAL COMPANY

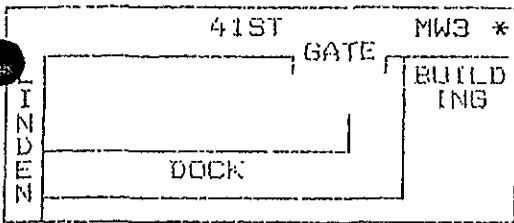
WELL CONSTRUCTION LOG

BORING # MW3



BORING # MW3

SHEET 1 OF 1 01-4451



PROJECT # 89-1008 PROJECT NAME: CAL LINEN
 LOCATION: 999 41ST STREET, OAKLAND, CA
 LOGGED BY: REINHARD ROHMKE
 CONTRACTOR: HEW DRILLING
 DRILLING METHODS: 8 1/4" HOLLOW STEM AUGER
 SAMPLING METHODS: SPLIT SPOON SAMPLER
 START TIME: 8:45 DATE: 9/26/89
 STOP TIME: 12:15 DATE: 9/26/89
 TOTAL DEPTH: 21.5'

SITE MAP

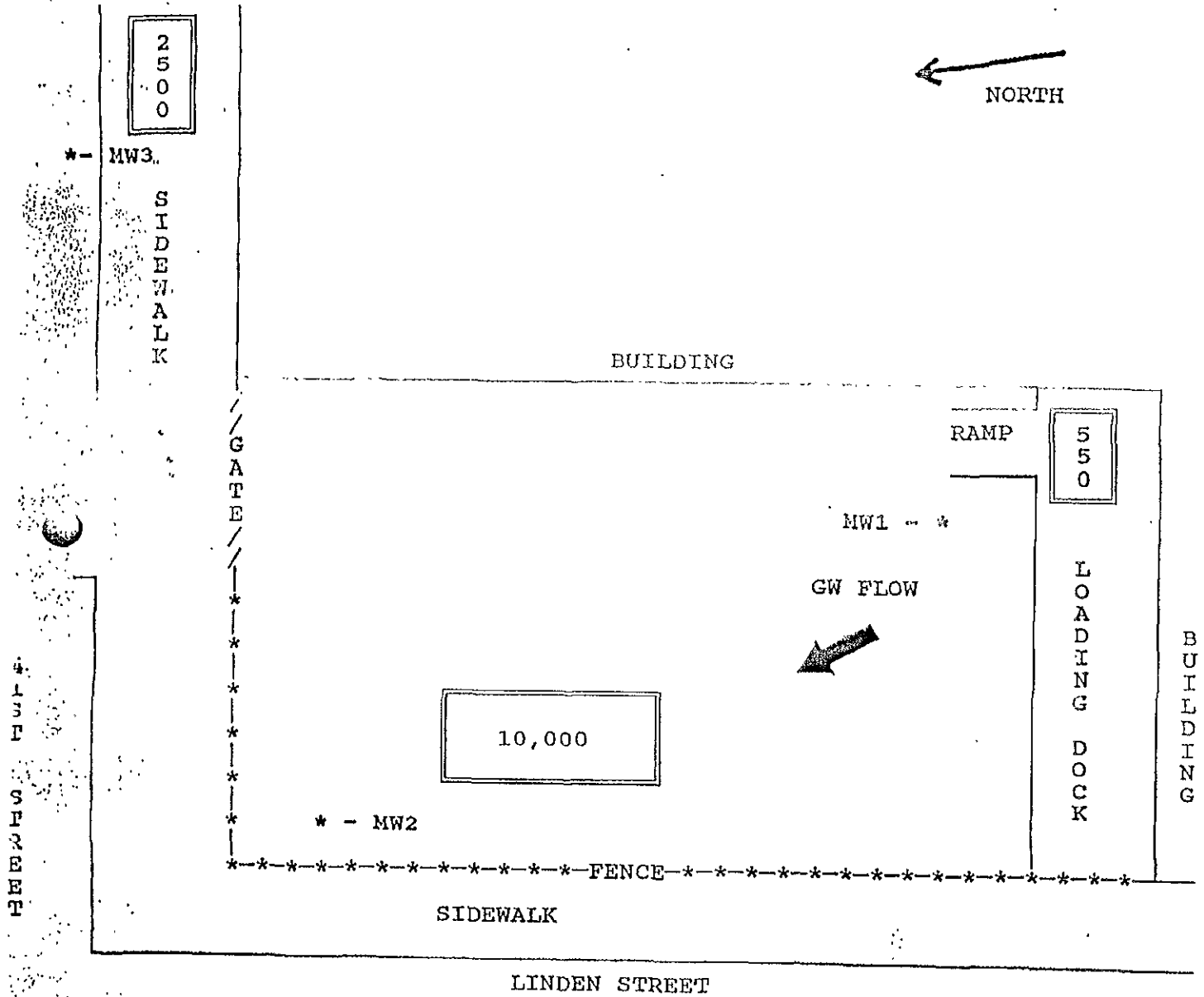
DEPTH	SAMPLE #	RECOVERY	TIME	BLOWS	DESCRIPTION	USCS	SYMBOL
0					3" ASPHALT 6" GRAVEL BASE ROCK DARK BROWN-BLACK SILTY CLAY; DRY.	CL	
5	MW3A	18"	9:00	3-2-3	BROWN PEBBLY FINE SAND; LOOSE; DRY; WELL-SORTED; LITTLE CLAY.	SP	
8					BROWN SILTY CLAY.		
10	MW3B	18"	9:15	5-6-7	DARK GRAY-BROWN SILTY CLAY; WET.		▽
15					LIGHT BROWN SILTY CLAY WITH PEBBLES.	CL	
20					LIGHT BROWN SILTY CLAY.		
25					END OF BORING;		

REMARKS

FIGURE 1

01-445I

SITE PLAN - CALIFORNIA LINEN
989 41st STREET, OAKLAND, CA



* - Monitoring well location

01-445I

surveyed on October 12, 1989 by a California licensed surveyor. The water levels and conversions to elevations are given in Table 1 below.

TABLE 1
WATER LEVEL DEPTHS AND ELEVATIONS IN FEET. OCT 11, 1989

<u>Well</u>	<u>TOC Elev.</u>	<u>Depth</u>	<u>Elevation</u>
MW1	53.89	7.70	46.19
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TOC=Top of casing

Based on the present data ground water is flowing in a north-northwest direction towards the intersection of 41st and Linden Streets. This data is shown on Figure 1.

01-738

Job #1047. Toscani Bakery, 899 - 40th.St

LOG OF WELL

Took over well at -----	50	feet
Sandy clay -----	50 to 60	"
Yellow clay -----	60 "	82 "
Cement gravel -----	82 "	83 "
Yellow clay -----	83 "	90 "
Sandy clay -----	90 "	97 "
Gravel -----	97 "	102 "
Sandy clay -----	102 "	106 "
Clay -----	106 "	108 "

About 54' of 10" casing put in by Hall.

108 feet of 8" No. 14 R. H. Collar Casing with
50 feet of machine perforations & Welded reband.

Foreman J. Carrere.

Well finished May 8 - 1928.

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

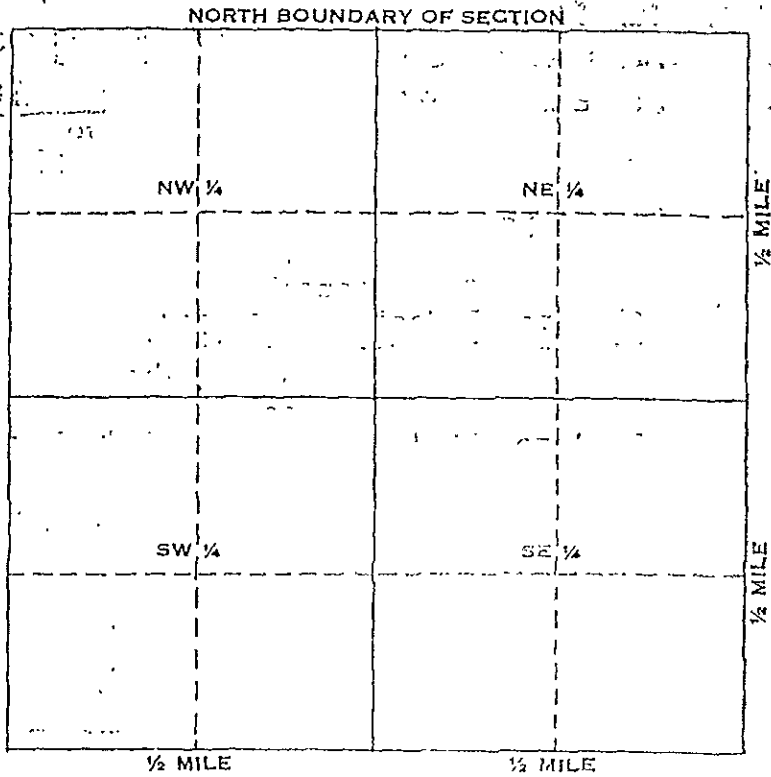
REMOVED

WELL LOCATION SKETCH

~~12159~~

120159

120159
120159

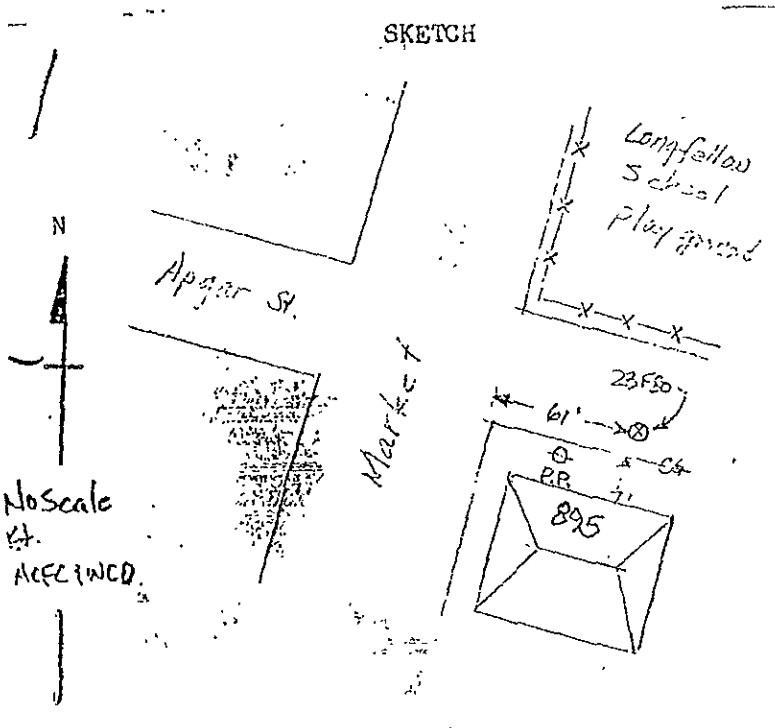


Township _____ N/S

Range _____ E/W

Section No. _____

A. Location of well in sectionized areas.
Sketch roads, railroads, streams, or other features as necessary.



B. Location of well in areas not sectionized.
Sketch roads, railroads, streams, or other features as necessary.
Indicate distances.

1974 JUL 12 AM 11 01

DEPT. OF WATER RESOURCES