J.W. SILVEIRA CO.

499 Embarcadero
Oakland, CA 94606

Tel: (510) 834-9810 Fax: (510) 763-9996
jw_silveira@hotmail.com

Real Estate

February 4, 2009

Mr. Jerry Wickham
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

SUBJECT: SENSITIVE RECEPTOR SURVEY REPORT CERTIFICATION
County File # RO 504
William Wurzbach Company
1200 20th Avenue
Oakland, CA 94606

Dear Mr. Wickham:

You will find enclosed one copy of the following document prepared by P&D Environmental, Inc.

- Sensitive Receptor Survey Report dated February 4, 2009 (document 0405.R2).

I declare under penalty of perjury, that the information and/or recommendations contained in the above-mentioned report for the subject site is true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to contact us at (510) 834-9811.

Sincerely,

J.W. Silveira Realty

J.W. Silveira

0405.L8

P&D ENVIRONMENTAL, INC.

55 Santa Clara Ave, Suite 240
Oakland, CA 94610
(510) 658-6916

February 4, 2009
Report 0405.R2

Mr. J.W. Silveira
J.W. Silveira Realty
499 Embarcadero
Oakland, CA 94606

SUBJECT: SENSITIVE RECEPTOR SURVEY REPORT
County File #RO 504
William Wurzbach Company
1200 20th Avenue
Oakland, California

Dear Mr. Silveira:

P&D Environmental, Inc. (P&D) is pleased to present this report documenting the results of a well survey and sensitive receptor survey for a 2,000-foot radius for the subject site. This report is written in response to a request from Mr. Jerry Wickham of the Alameda County Department of Environmental Health (ACDEH) in a letter dated April 28, 2005. A U.S. Geological Survey topographic map showing the location of the subject site, a circle around the site with a 2,000-foot radius, and wells identified during the well survey is attached with this report as Figure 1. A Site Vicinity Map showing the locations of groundwater monitoring wells in the vicinity of the subject site is attached as Figure 2.

BACKGROUND

The well survey was requested by the ACDEH as part of the investigation of a release from an Underground Storage Tank (UST) at the subject site. Documentation of the investigation of the UST release is presented in greater detail in other reports for the subject site. The presently known extent of impacted groundwater at and near the subject site associated with the UST release is limited to the immediate vicinity of well MW1. The extent of petroleum hydrocarbons in groundwater has not yet been defined.

WELL SURVEY

P&D submitted a request to Mr. James Yoo of the Alameda County Public Works Agency (ACPWA) for available well information within a 2,000-foot radius of the subject site. On January 14, 2009 Ms. Vicky Hamlin of ACPWA provided tables via e-mail to P&D that transmitted the findings of the ACPWA database search. Ms. Hamlin stated in her transmittal that the search area is in Township T2S, Range R3W, and included all or part of Section 6 Tracts DEFGKLMNPQ; and also in Township T2S, Range R4W, and included all or part of Section 1 Tracts HJR. Ms. Hamlin also stated that there were no results for wells in the search area in the ACPWA database in the underlined Sections identified above.

Records for a total of 83 locations were provided by ACPWA. One of the locations did not have any information other than the location. Three of the locations were for soil borings. Information for a total of 79 wells was included in the spreadsheet provided by ACPWA. All records identified by ACPWA (including destroyed wells and abandoned but not destroyed wells) and associated well information are summarized in Table 1. All but one of the 79 wells were groundwater monitoring wells that extended to a maximum depth of 47 feet. Three of these wells were located in San Leandro. The one well that was not a groundwater monitoring well was identified as abandoned and not being used but not having been destroyed through a permitted process. The well had a reported depth of 345 feet, and the location of the well is shown on Figure 2. The well address was located on Figure 1 by locating the site address provided by ACPWA using the internet services Mapquest and Google Earth. The information in Table 1 for the well is high-lighted with bold. A legend provided by ACPWA for the well search that defines the various well search result abbreviations is also attached with Table 1.

P&D also submitted a request to Ms. Ann Roth of the California Department of Water Resources (DWR) for available well information within a 2,000-foot radius of the subject site. On January 7, 2009 Ms. Roth provided a total of 126 tif files on a compact disk, some of which consisted of multiple images. The files were for wells within the DWR database in Township T2S, Range R3W, Section 6, and also in Township T2S, Range R4W, Section 1. Information regarding the wells from the DWR database is summarized in Table 2. Review of Table 2 shows that 22 of the files are for soil boring logs, and that all of the remaining files are groundwater monitoring wells with the exception of six locations. The designations for these six locations were unknown (1), other (3), industrial (1), and cathodic (1). A discussion of the location of each of the six wells is provided in Table 2. Two of these wells were identified inside the 2,000 foot search radius (see Figure 1 and Table 2). The well address was located on Figure 1 by locating the site address information on the DWR Well Completion Reports (WCRs) using the internet services Mapquest and Google Earth. The information in Table 2 for the two wells identified inside the 2,000 foot search radius is high-lighted with bold.

Information regarding the wells shown in Figure 1 is summarized in Table 3.

HYDROGEOLOGY

Review of Figure 1 shows that the Brooklyn Basin (connected to San Francisco Bay by way of a Tidal Canal to the south and the Oakland Inner Harbor to the north) is located approximately 1,100 feet to the southwest of the subject site, and Sausal Creek is located approximately 4,300 feet to the east of the subject site. Review of Figure 1 also shows that the site is located on a hillside that slopes to the southwest.

Review of groundwater flow direction information for nearby sites that have groundwater monitoring wells shows that the groundwater flow direction at 2200 East 12th Street (located approximately 685 feet southeast of the subject site) has historically been to the west-southwest, and

the groundwater flow direction at 2345 International Boulevard (located approximately 1,600 feet southeast of the subject site) has historically been to the southwest. Additionally, the groundwater flow direction at 2301 East 12th Street (located approximately 1,440 feet southeast of the subject site) has historically been calculated to be to the northwest. However, the calculated groundwater flow direction at the site on June 4, 2007 was to the west-southwest.

The groundwater flow direction at the subject site has historically been calculated to be to the north-northeast. However, the calculated groundwater flow direction is uphill, and is questionable based on the calculated groundwater elevations in well MW2. The cause for the lower groundwater surface elevation at well MW2 appears to be related to the site geology, and is not understood at this time with the available subsurface and regional geologic information.

SENSITIVE RECEPTORS

Internet searches were performed using the search functions at the internet services Mapquest, Yahoo, and Yellow Pages for sensitive receptor facilities in the vicinity of the subject site. Once the subject site address had been entered and a site vicinity map was obtained for each website, the "search nearby" field was used to search for each of the following types of facility: day care, daycare, nursery school, child care, childcare, preschool, pre-school, school, recreation center, hospital, convalescent home, and nursing home. The distance between the sites identified during the internet search and the subject site was measured using the internet service Google Earth by entering the facility addresses into the location search field and using the measuring tool to measure the distance from each facility to the subject site. Facilities located within 2,000 feet of the subject site that were identified during the internet search and the associated distances to the subject site are summarized in Table 4. A total of nine facilities were identified within 2,000 feet of the subject site.

DISCUSSION AND RECOMMENDATIONS

The groundwater flow direction at the site has historically been to the north-northeast. However, the groundwater flow direction at the site is in the uphill direction, and is not consistent with the site topography and with the westerly to southwesterly groundwater flow directions for nearby sites that have groundwater monitoring wells. The cause for the north-northeasterly groundwater flow direction at the subject site appears to be related to groundwater levels in uphill well MW2, and is not understood at this time with the available subsurface and regional geologic information. Based on the available groundwater flow direction information from nearby sites and the site topography, the groundwater flow direction at the site is assumed to be westerly to southwesterly.

During the most recent quarterly groundwater monitoring and sampling of the wells at the subject site on June 6, 2007 petroleum hydrocarbons were only detected in well MW1 (see Figure 2). The extent of petroleum hydrocarbons in groundwater in the vicinity of the subject site is presently not known, but does not extend to well MW3 which is located 50 feet to the west of well MW1.

A total of two wells were identified inside the 2,000 foot search radius that are not groundwater monitoring wells. The property for each well is located approximately 1,500 feet from the subject site (see Figure 1). One of the wells is located to the west of the subject site. Based on the distance of each well from the subject site, in addition to the limited extent of petroleum hydrocarbons in groundwater to the west of the subject site, neither of the wells is considered to be at risk from petroleum hydrocarbons in groundwater at the subject site.

Similarly, none of the sensitive receptors identified in Table 4 is located to the west or southwest of the subject site. The closest sensitive receptor to the subject site that is identified in Table 4 is 600 feet to the east-southeast of the subject site. Based on the distance of the identified sensitive receptors from the subject site, in addition to the limited extent of petroleum hydrocarbons in groundwater to the west of the subject site, none of the sensitive receptors identified in Table 4 is considered to be at risk from petroleum hydrocarbons in groundwater at the subject site.

P&D recommends that additional subsurface investigation be performed to define the extent of petroleum hydrocarbons in groundwater in the vicinity of the subject site.

LIMITATIONS

This report was prepared solely for the use of J.W. Silveria Realty. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities that is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The

conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.

Paul H. King
Professional Geologist # 5901
Expires: 12/31/09

Attachments:

Table 1 – Alameda County Public Works Agency Well Summary Information
Table 2 – Department of Water Resources Well Summary Information
Table 3 – Well Summary Information
Table 4 – Sensitive Receptors Located within a 2,000 foot radius of 1200 20th Avenue, Oakland, CA
Figure 1 –Well Location Map
Figure 2 – Site Vicinity Map Showing Existing Wells and Soil Borings

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TABLES

Table 1
Alameda County Public Works Agency Well Summary Information

Township /Range	Section, Tract, and Well Number	Address	City	Owner	Update	Xcoord	Ycoord	Total Depth	Water Depth	Casing Diameter (Inches)	Drilldate	Use
2S/3W	6D 4	15002 HESP. BLVD.	San Leandro	CHEVRON	6/15/1989	122240577	37791587	23	13	4	May-88	MON
2S/3W	6D 5	15002 HESP. BLVD.	San Leandro	CHEVRON	6/15/1989	122240577	37791587	22	12	4	May-88	MON
2S/3W	6D 6	15002 HESP. BLVD.	San Leandro	CHEVRON	6/15/1989	122240577	37791587	21	11	4	May-88	MON
2S/3W	6G 1	1951 23rd Av	Oakland	Church of God	8/13/1997	122231122	37787144	20	10	2	8/93	MON
2S/3W	6L 1	2345 E 14th St	Oakland	Aaron & Stanley Wong	8/21/1997	122234104	37782910	34	13	2	7/93	MON
2S/3W	6L 2	2345 E 14th St	Oakland	Aaron & Stanley Wong	8/21/1997	122234104	37782910	24	13	2	7/93	MON
2S/3W	6L25	2301 E 12th St	Oakland	B + B Inc. MW-1	9/21/1992	122234600	37783399	28	21	2	Dec-91	MON
2S/3W	6L26	2301 E 12th St	Oakland	B + B Inc. MW-2	6/23/1993	122235379	37782463	19	9	2	7/92	MON
2S/3W	6L27	2301 E 12th St	Oakland	B + B Inc. MW-3	6/23/1993	122235379	37782463	19	9	2	7/92	MON
2S/3W	6L 1	2200 E. 14th St	Oakland	Exxon Company USA	2/4/1998	122236581	37784510	20	14	2	9/95	MON
2S/3W	6L 2	2200 E. 14th St	Oakland	Exxon Company USA	2/4/1998	122236581	37784510	20	9	2	9/95	MON
2S/3W	6L14	2200 E 14th Street	Oakland	Lili Goode	3/28/1991	122236594	37784516	15	11	4	9/90	MON
2S/3W	6M3	2200 E 14th Street	Oakland	Lili Goode	3/28/1991	122236594	37784516	21	10	4	8/90	MON
2S/3W	6L16	2200 E 14th Street	Oakland	Lili Goode	3/28/1991	122236594	37784516	19	6	4	8/90	MON
2S/3W	6L	2142 E. 12TH ST	Oakland	SHELL OIL	1/24/1990	122234914	37784549	20	15	6	Mar-89	BOR*
2S/3W	6L 9	2142 East 12th Street	Oakland	Shell Oil Company	7/24/1990	122234914	37784549	21	6	2	Oct-89	MON
2S/3W	6L10	2142 East 12th Street	Oakland	Shell Oil Company	7/24/1990	122234914	37784549	20	6	2	Oct-89	MON
2S/3W	6L11	2142 East 12th Street	Oakland	Shell Oil Company	7/24/1990	122234914	37784549	22	6	2	Oct-89	MON
2S/3W	6L12	2142 East 12th Street	Oakland	Shell Oil Company	7/24/1990	122234914	37784549	20	6	2	Oct-89	MON
2S/3W	6L17	2345 East 14th Street	Oakland	Stanley Wong	11/18/1991	122234121	37782937	27	15	4	8/91	MON
2S/3W	6L21	2345 E. 14th St	Oakland	Stanley Wong MW1	8/21/1992	122234121	37782937	35	19	2	5/91	MON
2S/3W	6L19	2345 E. 14th St	Oakland	Stanley Wong MW2	8/14/1992	122234121	37782937	35	20	2	8/91	TES
2S/3W	6L20	2345 E. 14th St	Oakland	Stanley Wong MW3	8/14/1992	122234121	37782937	35	19	2	8/91	TES
2S/3W	6M1	2200 E 12th St	Oakland	Stanley Wong MW-1	9/8/1992	122238470	37784566	27	6	2	5/91	TES
2S/3W	6M2	2200 E 12th St	Oakland	Stanley Wong MW-2	9/8/1992	122238470	37784566	27	6	2	5/91	TES
2S/3W	6M3	2200 E 12th St	Oakland	Stanley Wong MW-3	9/8/1992	122238470	37784566	27	6	2	5/91	TES
2S/3W	6L 5	2200 E. 12th St.	Oakland	Texaco	3/12/1991	122234914	37784549	0	0	0	Nov-90	BOR*
2S/3W	6L13	2200 E. 12th St.	Oakland	Texaco	3/12/1991	122234914	37784549	14	7	19	Nov-90	DES
2S/3W	6L 4	2200 EAST 12TH ST.	Oakland	TEXACO	6/28/1989	122234914	37784549	17	11	4	Dec-88	MON
2S/3W	6L 5	2200 EAST 12TH ST.	Oakland	TEXACO	6/28/1989	122234914	37784549	19	10	4	Dec-88	MON
2S/3W	6L 6	2200 EAST 12TH ST.	Oakland	TEXACO	6/28/1989	122234914	37784549	16	13	4	Dec-88	MON
2S/3W	6L 7	2200 EAST 12TH ST.	Oakland	TEXACO	6/28/1989	122234914	37784549	17	13	4	Dec-88	MON
2S/3W	6L 8	2200 EAST 12TH ST.	Oakland	TEXACO	6/28/1989	122234914	37784549	17	14	4	Dec-88	MON
2S/3W	6L 1	2200 EAST 12TH ST	Oakland	TEXACO STA #62488000088	12/16/1988	122234914	37784549	18	6	2	Jun-88	MON
2S/3W	6L 2	2200 EAST 12TH ST	Oakland	TEXACO STA #62488000088	12/16/1988	122234914	37784549	20	6	2	Jun-88	MON
2S/3W	6L 3	2200 EAST 12TH ST	Oakland	TEXACO STA #62488000088	12/16/1988	122234914	37784549	17	6	2	Jun-88	MON
2S/3W	6L 1	E. 12th St && 22nd Av	Oakland	Union Pacific Railroad	3/12/1998	122236791	37783122	17	9	2	Oct-95	MON
2S/3W	6M 1	2032 East 12th St	Oakland	Stanley Wong	8/28/1991	122240563	37784549	19	0	2	6/91	MON
2S/3W	6M 2	2032 East 12th St	Oakland	Stanley Wong	8/28/1991	122240563	37784549	27	9	2	5/91	TES
2S/3W	6M 3	2032 East 12th St	Oakland	Stanley Wong	8/28/1991	122240563	37784549	27	6	2	5/91	TES
2S/3W	6M 4	1200 20th Av	Oakland		7/22/1997	122239453	37784990	30	0	2	2/95	MON
2S/3W	6M 5	1200 20th Av	Oakland		7/22/1997	122239453	37784990	35	0	2	2/95	MON
2S/3W	6M 6	1200 20th Av	Oakland		7/22/1997	122239453	37784990	30	0	2	2/95	MON
2S/3W	6M 7	1832 E 12th St	Oakland		7/22/1997	122241379	37786197	30	0	2	2/95	MON
2S/3W	6M 8	1832 E 12th St	Oakland		7/22/1997	122241379	37786197	30	0	2	2/95	MON
2S/3W	6N 1	P.O. BOX 2064	Oakland	PORT OF OAKLAND	12/16/1988	122240557	37781079	22	7	2	Jun-88	MON
2S/3W	6N 2	P.O. BOX 2064	Oakland	PORT OF OAKLAND	12/16/1988	122240557	37781079	20	5	2	Nov-88	DES
2S/3W	6N 3	P.O. BOX 2064	Oakland	PORT OF OAKLAND	12/16/1988	122240557	37781079	23	9	2	Jun-88	MON
2S/3W	6N 5	P.O. BOX 2064	Oakland	PORT OF OAKLAND	12/16/1988	122240557	37781079	47	9	2	Jun-88	MON
2S/3W	6N 6	P.O. BOX 2064	Oakland	PORT OF OAKLAND	12/16/1988	122240557	37781079	20	7	2	Jun-88	MON

Table 1
Alameda County Public Works Agency Well Summary Information

Township /Range	Section, Tract, and Well Number	Address	City	Owner	Update	Xcoord	Ycoord	Total Depth	Water Depth	Casing Diameter (Inches)	Drilldate	Use
2S/3W	6N 7	P.O. BOX 2064	Oakland	PORT OF OAKLAND	12/16/1988	122240557	37781079	0	0	0		
2S/3W	6N12	1050 22nd Av	Oakland	Cottonmill	12/26/1997	122239203	37782018	28	15	2	5/94	MON
2S/3W	6N 9	2100 Livingston St.	Oakland	Kipatrick's Bakeries MW1	6/23/1993	122239616	37780850	25	9	2	9/92	MON
2S/3W	6N 4	EMBARCADERO ST	Oakland	PORT OF OAKLAND	6/28/1989	122297000	37801400	20	6	2	Nov-88	DES
2S/3W	6N 8	EMBARCADERO ST	Oakland	PORT OF OAKLAND	6/28/1989	122297000	37801400	20	7	2	Nov-88	MON
2S/3W	6N11	Embarcadero & Dennison St	Oakland	Port of Oakland W-9	7/22/1993	122241466	37779424	24	0	2	Oct-92	DES
2S/3W	6N10	Embarcadero & Dennison St	Oakland	Port of Oakland W-9R	7/15/1993	122241472	37779429	20	0	4	Oct-92	MON
2S/3W	6N	2000 Embarcadero	Oakland	Western Federal Savings &	9/11/1990	122241358	37780427	30	25	6	Jul-90	BOR
2S/3W	6N 4					0	0	20	5	2	Jun-88	MON
2S/3W	**6P 1**	**1091 CALCOT ST**	**Oakland**	**SPACE 4 U MGMT**	**7/30/1984**	**122236818**	**37781262**	**345**	**37**	**0**	**/17**	**ABN**
2S/3W	6Q 7	2509 East 14th Street	Oakland	East Bay Asian Local Deve	7/3/1990	122232492	37781855	23	15	2	Dec-89	TES
2S/3W	6Q 6	2509 East 14th Street	Oakland	East Bay Asian Local Deve	7/3/1990	122232492	37781855	25	16	2	Dec-89	TES
2S/3W	6Q 5	2509 East 14th Street	Oakland	East Bay Asian Local Deve	7/3/1990	122232492	37781855	29	15	2	Dec-89	TES
2S/3W	6Q 8	2530 E. 14th St. MW-15	Oakland	Oakland Community Housing	4/17/1995	122232163	37781897	18	7	2	6/94	MON
2S/3W	6Q 9	2530 E. 14th St. MW-16	Oakland	Oakland Community Housing	4/17/1995	122232163	37781897	17	6	2	6/94	MON
2S/3W	6Q10	2530 E. 14th St. MW-17	Oakland	Oakland Community Housing	4/17/1995	122232163	37781897	17	12	2	6/94	MON
2S/3W	6Q 1	E14TH & 25TH AVE	Oakland	STANDARD BRANDS PAINT CO	5/21/1986	122230469	37781079	31	17	0	Sep-85	MON
2S/3W	6Q 2	2530 East 14th Street	Oakland	Stark, Wells, Rahl & Schw	6/21/1990	122232180	37781897	19	8	2	3/90	TES
2S/3W	6Q 3	2530 East 14th Street	Oakland	Stark, Wells, Rahl & Schw	6/21/1990	122232180	37781897	18	9	2	3/90	TES
2S/3W	6Q 4	2530 East 14th Street	Oakland	Stark, Wells, Rahl & Schw	6/21/1990	122232180	37781897	18	7	2	3/90	TES
2S/4W	1H 7	1400 East 14th St.	Oakland	Bank of America MW-1	7/1/1993	122244727	37789336	26	11	2	5/92	MON
2S/4W	1H 1	East 12th and 14th Ave	Oakland	City of Oakland	7/27/1990	122245400	37788500	2	0	2	May-90	TES
2S/4W	1H 2	East 12th and 14th Ave	Oakland	City of Oakland	7/27/1990	122245400	37788500	30	0	2	May-90	TES
2S/4W	1H 3	East 12th and 14th Ave	Oakland	City of Oakland	7/27/1990	122245400	37788500	25	0	2	May-90	TES
2S/4W	1H 4	1401 E 14th St	Oakland	David DeRuiter MW1	8/21/1992	122244950	37789131	25	15	2	6/91	MON
2S/4W	1H 5	1401 E. 14th St	Oakland	David DeRuitter MW2	8/21/1992	122244950	37789116	25	14	2	6/91	MON
2S/4W	1H 6	1401 E. 14th St	Oakland	David DeRuitter MW3	8/21/1992	122244997	37789100	25	13	2	6/91	MON
2S/4W	1H 8	1518 East 12th St.	Oakland	David Doyle MW-1	7/16/1993	122244389	37788052	30	23	2	Dec-92	MON
2S/4W	1H 9	1518 East 12th St.	Oakland	David Doyle MW-2	7/16/1993	122244389	37788052	32	23	2	Dec-92	MON
2S/4W	1H10	1518 East 12th St.	Oakland	David Doyle MW-3	7/16/1993	122244389	37788052	30	21	2	Dec-92	MON
2S/4W	1H11	1201 14th Av	Oakland	General Tire Inc	9/19/1997	122245418	37788620	17	12	4	9/93	MON
2S/4W	1H12	1201 14th Av	Oakland	General Tire Inc	9/19/1997	122245418	37788620	17	12	4	9/93	MON
2S/4W	1H13	1353 E. 14th St	Oakland		10/27/1998	122245443	37789406	15	6	2	7/97	MON

Table 2
Department of Water Resources Well Summary Information

County	Township	Section	Log Number	Image Filename	Use	Notes
ALA01	02S03W	6	179040A-C	51295002.tif	MON	
ALA01	02S03W	6	01-268L	51295003.tif	MON	
ALA01	02S03W	6	01-268M	51295004.tif	MON	
ALA01	02S03W	6	01-268N	51295005.tif	MON	
ALA01	02S03W	6	01-268O	51295006.tif	MON	
ALA01	02S03W	6	01-268P	51295007.tif	MON	
ALA01	02S03W	6	NN	51295008.tif	MON	
ALA01	02S03W	6	288481	51295009.tif	MON	
ALA01	02S03W	6	179040	51295010.tif	MON	
ALA01	02S03W	6	179040C	51295011.tif	MON	
ALA01	02S03W	6	01-408V	51295012.tif	MON	
ALA01	02S03W	6	01-408W	51295013.tif	MON	
ALA01	02S03W	6	01-408X	51295014.tif	MON	
ALA01	02S03W	6	179040A	51295015.tif	MON	
ALA01	02S03W	6	179040B	51295016.tif	MON	
ALA01	02S03W	6	01-1295	51295017.tif	UNK	168 feet deep, 6-inch diameter casing, address is 1754-27th Street, located 4700 feet from the subject site, outside the 2,000 foot search radius.
ALA01	02S03W	6	01-494	51295018.tif	MON	
ALA01	02S03W	6	01-494W-Y	51295019.tif	MON	
ALA01	02S03W	6	01-494X	51295020.tif	MON	
ALA01	02S03W	6	01-494Y	51295021.tif	MON	
ALA01	02S03W	6	01-494W	51295022.tif	MON	
ALA01	02S03W	6	01-406M	51295023.tif	MON	
ALA01	02S03W	6	01-406N	51295024.tif	MON	
ALA01	02S03W	6	01-406O	51295025.tif	MON	
ALA01	02S03W	6	168059	51295026.tif	MON	
ALA01	02S03W	6	168057	51295027.tif	MON	
ALA01	02S03W	6	168058	51295028.tif	MON	
ALA01	02S03W	6	01-454P	51295029.tif	MON	
ALA01	02S03W	6	01-454P-S	51295030.tif	MON	
ALA01	02S03W	6	01-454Q	51295031.tif	MON	
ALA01	02S03W	6	01-454R	51295032.tif	MON	
ALA01	02S03W	6	01-454S	51295033.tif	MON	
ALA01	02S03W	6	288482	51295034.tif	SB	
ALA01	02S03W	6	01-436G	51295035.tif	SB	

Table 2
Department of Water Resources Well Summary Information

County	Township	Section	Log Number	Image Filename	Use	Notes
ALA01	02S03W	6	01-436H	51295036.tif	SB	
ALA01	02S03W	6	01-436I	51295037.tif	MON	
ALA01	02S03W	6	316597	51295038.tif	MON	
ALA01	02S03W	6	316596	51295039.tif	MON	
ALA01	02S03W	6	316595	51295040.tif	MON	
ALA01	02S03W	6	341568	51295041.tif	MON	
ALA01	02S03W	6	342954A	51295042.tif	MON	
ALA01	02S03W	6	NN	51295043.tif	MON	
ALA01	02S03W	6	NN	51295044.tif	MON	
ALA01	02S03W	6	01-520A	51295045.tif	SB	
ALA01	02S03W	6	01-510B	51295046.tif	SB	
ALA01	02S03W	6	01-510C	51295047.tif	SB	
ALA01	02S03W	6	01-510D	51295048.tif	SB	
ALA01	02S03W	6	01-510E	51295049.tif	SB	
ALA01	02S03W	6	01-510F	51295050.tif	SB	
ALA01	02S03W	6	01-510G	51295051.tif	SB	
ALA01	02S03W	6	01-510H	51295052.tif	SB	
ALA01	02S03W	6	01-510I	51295053.tif	SB	
ALA01	02S03W	6	01-510J	51295054.tif	SB	
ALA01	02S03W	6	01-510K	51295055.tif	SB	
ALA01	02S03W	6	01-510L	51295056.tif	SB	
ALA01	02S03W	6	01-510M	51295057.tif	SB	
ALA01	02S03W	6	341566	51295058.tif	TES	
ALA01	02S03W	6	01-466S	51295059.tif	MON	
ALA01	02S03W	6	01-466I	51295060.tif	MON	
ALA01	02S03W	6	01-466T	51295061.tif	MON	
ALA01	02S03W	6	168532	51295062.tif	MON	
ALA01	02S03W	6	168533	51295063.tif	MON	
ALA01	02S03W	6	168534	51295064.tif	MON	
ALA01	02S03W	6	168535	51295065.tif	MON	
ALA01	02S03W	6	168536	51295066.tif	MON	
ALA01	02S03W	6	168537	51295067.tif	MON	
ALA01	02S03W	6	168538	51295068.tif	MON	
ALA01	02S03W	6	168541	51295069.tif	MON	
ALA01	02S03W	6	168539	51295070.tif	MON	
ALA01	02S03W	6	168540	51295071.tif	MON	

Table 2
Department of Water Resources Well Summary Information

County	Township	Section	Log Number	Image Filename	Use	Notes
ALA01	02S03W	6	340365	51295072.tif	MON	
ALA01	02S03W	6	496351	51295073.tif	MON	
ALA01	02S03W	6	01-535U	51295074.tif	MON	
ALA01	02S03W	6	496350	51295075.tif	MON	
ALA01	**02S03W**	**6**	**01-1296**	**51295076.tif**	**OTHER**	**Well is 345 feet deep. WCR address is California Cotton Mill which corresponds with ACPWA T2S, R3W, Section 6, Tract P, Well 1 at 1091 Calcot Street. A search of Google.com for "Cotton Mill Oakland California" identified Cotton Mill Studios. The name over the door at the site is Cotton Mill Studios. The well location at the property is unknown. The property is approximately 1,500 feet southeast of the subject site, inside the 2,000 foot search radius.**
ALA01	02S03W	6	01-1297	51295077.tif	OTHER	Well 681 feet deep. WCR address is Montgomery Ward at 29th Avenue and E 14th Street (now International Boulevard). A search at google.com identified the historic site as located at the southwest corner of the intersection. The property is located 3950 feet from the subject site, outside the 2,000 foot search radius.
ALA01	02S03W	6	01-118	51295078.tif	SB	
ALA01	02S03W	6	260145	51295079.tif	MON	
ALA01	02S03W	6	260146	51295080.tif	TES	
ALA01	02S03W	6	260147	51295081.tif	TES	
ALA01	02S03W	6	259852	51295082.tif	TES	
ALA01	02S03W	6	259853	51295083.tif	MON	
ALA01	02S03W	6	259851	51295084.tif	MON	
ALA01	02S04W	1	01-513J	51338002.tif	MON	
ALA01	02S04W	1	01-506U	51338003.tif	MON	
ALA01	02S04W	1	01-506V	51338004.tif	MON	
ALA01	02S04W	1	01-506W	51338005.tif	MON	
ALA01	02S04W	1	01-1363	51338006.tif	MON	
ALA01	02S04W	1	NN	51338007.tif	MON	
ALA01	02S04W	1	01-513L	51338008.tif	MON	
ALA01	02S04W	1	01-513M	51338009.tif	MON	
ALA01	02S04W	1	01-513N	51338010.tif	MON	
ALA01	02S04W	1	01-869	51338011.tif	SB	
ALA01	02S04W	1	01-854	51338012.tif	SB	
ALA01	02S04W	1	01-348	51338013.tif	MON	

Table 2
Department of Water Resources Well Summary Information

County	Township	Section	Log Number	Image Filename	Use	Notes
ALA01	02S04W	1	01-513O	51338014.tif	MON	
ALA01	02S04W	1	01-870	51338015.tif	IND	Well is 271 feet deep, 16-inch diameter casing at surface, installed in 1929. The WCR address is "Foot of 5th Ave." and the owner is the Great Western Power Company Steam Plant, Oakland. All of 5th Avenue is outside of the 2,000 foot search radius.
ALA01	02S04W	1	345517	51338016.tif	MON	
ALA01	02S04W	1	345518	51338017.tif	MON	
ALA01	02S04W	1	01-546A	51338018.tif	MON	
ALA01	02S04W	1	01-546B	51338019.tif	MON	
ALA01	02S04W	1	01-546C	51338020.tif	MON	
ALA01	02S04W	1	01-546D-E	51338021.tif	SB	
ALA01	02S04W	1	01-546F-G	51338022.tif	SB	
ALA01	02S04W	1	01-546H-I	51338023.tif	SB	
ALA01	02S04W	1	340528A	51338024.tif	MON	
ALA01	02S04W	1	340528B	51338025.tif	MON	
ALA01	02S04W	1	340528C	51338026.tif	MON	
ALA01	02S04W	1	340351	51338027.tif	MON	
ALA01	02S04W	1	340352	51338028.tif	MON	
ALA01	02S04W	1	340353	51338029.tif	MON	
ALA01	02S04W	1	01-529V	51338030.tif	MON	
ALA01	**02S04W**	**1**	**01-855**	**51338031.tif**	**OTHER**	**Well is 727 feet deep, 16-inch diameter casing at surface, installed in 1955. The WCR address is Seventeenth Ave. and the Embarcadero, and the property owner is identified as the Port of Oakland. The WCR identifies the well as located at T2S, R3W, Section 6, in either Tract K or Tract R. Tract K is located west of the 2,000-foot radius study area. A very small portion of Tract R is inside the 2,000 foot search radius, but Tract R is not located near Seventeenth Avenue. The location of the intersection of 17th Avenue and The Embarcadero is approximately 1,500 feet west of the subject site. The Tract is assumed to be incorrectly identified on the WCR and the well is assumed to be at the intersection of 17th Avenue and the Emarcadero, which is inside the 2,000 foot search radius.**
ALA01	02S04W	1	01-537A	51338032.tif	MON	
ALA01	02S04W	1	01-537B	51338033.tif	MON	
ALA01	02S04W	1	01-537C	51338034.tif	MON	

Table 2
Department of Water Resources Well Summary Information

County	Township	Section	Log Number	Image Filename	Use	Notes
ALA01	02S04W	1	162221	51338035.tif	CAT	Well is 175 feet deep. The WCR address is Embarcadero railroad crossing. The WCR identifies the well in tract D. The only railroad crossing observable using Google Earth is at the intersection of Embarcadero and 5th Avenue. Both tract D and the intersection of Embarcadero and 5th Avenue are outside the 2,000 foot search radius.
ALA01	02S04W	1	01-480O	51338036.tif	MON	
ALA01	02S04W	1	01-480Q	51338037.tif	MON	
ALA01	02S04W	1	01-480R	51338038.tif	MON	
ALA01	02S04W	1	01-480S	51338039.tif	MON	
ALA01	02S04W	1	01-480T	51338040.tif	MON	
ALA01	02S04W	1	01-480U	51338041.tif	MON	
ALA01	02S04W	1	01-480V	51338042.tif	MON	
ALA01	02S04W	1	01-480W	51338043.tif	MON	
ALA01	02S04W	1	01-480X	51338044.tif	MON	

Table 3
Well Summary Information

Township /Range	Section, Tract, and Well Number	Address	City	Owner	Xcoord	Ycoord	Total Depth	Water Depth	Casing Diameter (Inches)	Drilldate	Use	Database	Distance From Subject Site (Feet)
2S/3W	6P 1	1091 CALCOT ST	Oakland	SPACE 4 U MGMT	122236818	37781262	345	37	unknown	1925	ABN	ACPWA and DWR	1,500
2S/3W	6Q	29th Ave. and E. 14th	Oakland	PORT OF OAKLAND			727	76	12	8/3/1955	OTHER	DWR	1,500
NOTES:													
All well locations are shown on Figure 1													
DWR = Deepartment of Water Resources													
ACPWA = Alameda County Public Works Agency													
ABN = Abandoned but not destroyed with a permit													

Table 4

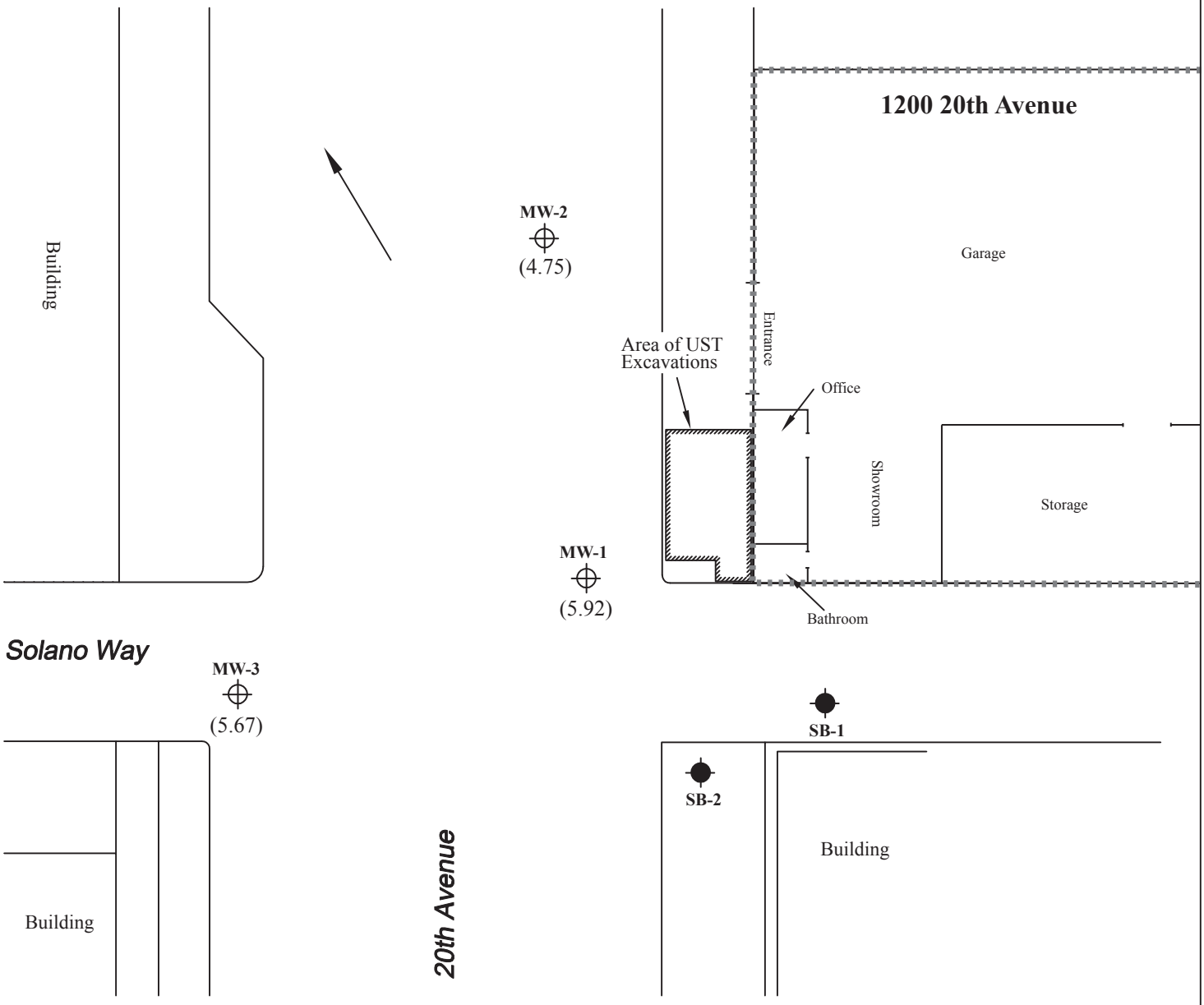
Sensitive Receptors Located Within 2,000 feet of 1200 20th Ave., Oakland, CA

Category	Facility Name	Facility Address	Approximate Distance and Direction from Site	Comments
Schools	Life Academy	2111 International Blvd., Oakland	600 feet ESE	
Preschools & Kindergarten	Arco Iris Daycare	2110 E 15th St., Oakland	950 feet ENE	
Day Care	Advance Day Care Center	2236 International Blvd., Oakland	1,200 feet ESE	
Elementary Schools	Garfield Elementary School	1640 22nd Ave., Oakland	1,400 feet ENE	
Schools	Youth Employment Partnership Charter School	2300 International Blvd., Oakland	1,500 feet ESE	
High Schools	Beacon High School	2101 Livingston St., Oakland	1,600 feet South	multiple schools
Elementary Schools	St. Anthony's Elementary School	1500 E 15th St., Oakland	1,800 feet NNW	
Middle Schools	Roosevelt Middle School	1926 E 19th St., Oakland	1,900 feet NNE	
Preschools & Kindergarten	Agnes School Pre-12	2372 International Blvd., Oakland	2,000 feet ESE	multiple schools

FIGURES

Figure 1
Site Location Map
William Wurzbach Company
1200 20th Avenue
Oakland, California

Base Map From:		
U.S.Geological Survey Oakland East and Oakland West, California 7.5 Minute Quadrangles Photorevised 1980	P&D Environmental, Inc. 55 Santa Clara Ave., Suite 240 Oakland, CA 94610	0 1,000 2,000 SCALE IN FEET



LEGEND

- MW-3 — Existing Monitoring Well
- SB-2 — Existing Soil Boring
- (5.92) — Groundwater Surface Elevation in Feet Above Mean Sea Level on 6/6/07
- Groundwater Flow Direction

Figure 2
Site Vicinity Map Showing Existing Wells and Soil Borings
William Wurzbach Company
1200 20th Avenue
Oakland, California

N

Base Map From:	P&D Environmental, Inc.	0 10 20
Tetra Tech EM Inc. Site Location Map	55 Santa Clara Avenue, Suite 240 Oakland CA 94610	SCALE IN FEET

J.W. SILVEIRA CO.

499 Embarcadero
Oakland, CA 94606

Tel: (510) 834-9810 Fax: (510) 763-9996
jw_silveira@hotmail.com

Real Estate

February 4, 2009

Mr. Jerry Wickham
Alameda County Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

SUBJECT: PREFERENTIAL PATHWAY SURVEY REPORT CERTIFICATION
County File # RO 504
William Wurzbach Company
1200 20th Avenue
Oakland, CA 94606

Dear Mr. Wickham:

You will find enclosed one copy of the following document prepared by P&D Environmental, Inc.

- Preferential Pathway Survey Report dated February 3, 2009 (document 0405.R3).

I declare under penalty of perjury, that the information and/or recommendations contained in the above-mentioned report for the subject site is true and correct to the best of my knowledge.

Should you have any questions, please do not hesitate to contact us at (510) 834-9811.

Sincerely,

J.W. Silveira Realty

J.W. Silveira

0405.L10

P&D ENVIRONMENTAL, INC.
55 Santa Clara Ave, Suite 240
Oakland, CA 94610
(510) 658-6916

February 3, 2009
Report 0405.R3

Mr. J.W. Silveira
J.W. Silveira Realty
499 Embarcadero
Oakland, CA 94606

SUBJECT: PREFERENTIAL PATHWAY SURVEY REPORT
County File # RO 504
William Wurzbach Company
1200 20th Avenue
Oakland, California

Dear Mr. Silveira:

P&D Environmental, Inc. (P&D) is pleased to present this report documenting the results of a preferential pathway study for the subject site. This report is written in response to a request from Mr. Jerry Wickham of the Alameda County Department of Environmental Health (ACDEH) in a letter dated July 19, 2005. A Site Location Map is attached as Figure 1, a Site Vicinity Map showing underground utility locations in the site vicinity is attached as Figure 2, and a cross section showing utility trench depths relative to the historic range of water table elevations is attached as Figure 3.

Based on the depth of utility trenches in the vicinity of the site and the measured depth to groundwater in groundwater monitoring wells MW-1 through MW-3 located in the vicinity of the utility trenches, the highest recorded groundwater levels at the site are below the bottom of the utility trenches in the immediate vicinity of the subject site.

BACKGROUND

The preferential pathway survey was requested by the ACDEH as part of the investigation of a release from an Underground Storage Tank (UST) at the subject site. Documentation of the investigation of the UST release is presented in greater detail in other reports for the subject site. The presently known extent of impacted groundwater at and near the subject site is limited to well MW-1. Additional subsurface investigation is required to define the extent of petroleum hydrocarbons in groundwater.

PREFERENTIAL PATHWAY SURVEY

The underground utilities evaluated in the vicinity of the site included storm drain, sanitary sewer, water supply, electrical, cable TV, and telephone. Utility maps were obtained from the City of Oakland (showing storm drain and sanitary sewer pipe locations and flow directions), the East Bay Municipal Utility District (EBMUD), and Pacific Gas & Electric Company (PG&E). Utility maps were not available from Comcast and AT&T California. In addition, the site vicinity was marked

with white paint and Underground Service Alert (USA) was notified for underground utility location. Information from the maps obtained from the different service providers was augmented with markings observed on the ground surface in the vicinity of the subject site as a result of USA marking. The underground utility locations identified during this investigation in the site vicinity are shown in Figure 2. Cross section D-D' shows utility trench depths relative to the historic range of water table elevations for groundwater monitoring wells that are located in the vicinity of each cross section. Information obtained during the investigation for each utility is discussed below.

A 6-inch high curb is used to define street widths for 20th Avenue. The width of 20th Avenue was measured to be 50 feet from curb to curb. The width of Solano Way was measured to be 20 feet from property line to property line. These measurements agree with the street widths shown on the utility location maps provided by EBMUD and PG&E. The measured distance from the building to the street edge on 20th Avenue is 12 feet.

Storm Drain Pipes

Storm drain pipes in the site vicinity are owned and operated by the City of Oakland (City). A utility map obtained from the City showing storm drain pipe diameters and flow directions in the site vicinity is attached as Appendix A. Review of Appendix A shows that no storm drain pipes are located in the vicinity of 20th Avenue and Solano Way. However, two storm drain inlets and a storm drain pipe are located beneath E 12th Street at the intersection of 20th Avenue and E 12th Street, approximately 190 feet downslope from the subject site.

The year of construction and the associated construction practices for the storm drain pipe trenches are unknown. According to current guidelines for trench backfill and bedding in section 306-1.2.1 of the City of Oakland 2006 "Greenbook" issued by the City of Oakland Design and Construction Services Department, the trench width is the pipe diameter plus a 9-inch minimum for each side of the pipe. The trench bedding consists of ¾-inch diameter crushed rock placed to a depth of 3 inches below the bottom of the outside of the pipe. The crushed rock bedding material surrounds the pipe and extends to a maximum height of 12 inches above the top of the outside of the pipe. Backfill material above the bedding material consists of jetted sand with a diameter equivalent to sieve #20 or greater. A Trench Detail diagram provided by the City of Oakland Design and Construction Services Department is also provided in Appendix A. However it is unknown if any of these utility trenches were constructed using these construction practices.

Sanitary Sewer Pipes

Sanitary sewer pipes in the site vicinity are owned and operated by the City. The utility map in Appendix A obtained from the City showing storm drain pipe information also shows sanitary sewer pipe diameters and flow directions in the site vicinity. Review of Appendix A and Figure 2 shows that a 12-inch sanitary sewer pipe is located along the center of 20th Avenue. The flow direction for the sanitary sewer pipe is to the southwest along 20th Avenue. Manholes for the

sanitary sewer pipe are located at the intersections of 20th Avenue with both International Blvd. (located to the northeast of the subject site) and with E 12th Street (located to the southwest of the subject site).

Manholes for the sanitary sewer pipe located along the center of 20th Avenue are located in the middle of the intersection of 20th Avenue with the north side of International Blvd., and at the middle of the intersection of 20th Avenue with the north side of E 12th Street. The horizontal distance between the manholes is approximately 370 feet, the invert elevation for each manhole is 19.23 and 2.0 feet, respectively, and the calculated depth of burial to the bottom of the sanitary sewer pipe from each of the manholes is approximately 8.69 and 3.67 feet, respectively. The sanitary sewer pipe invert elevation at the intersection of 20th Avenue and Solano Way (the location of utility cross section D-D') was calculated from the slope obtained from the invert elevations between the manholes at International Boulevard and E 12th Street. The calculated elevation was 8.0 feet. The ground surface elevation at D-D' was calculated from the slope obtained from the curb on the southwest side of International Boulevard and from the curb on the northeast side of E 12th Street at the intersections with 20th Avenue. The calculated elevation was 16.0 feet. The calculated depth of burial to the bottom of the sanitary pipe at D – D' was calculated to be 8.0 feet.

However, based on survey data associated with wells MW-1 and MW-3, the depth of burial of the sanitary sewer pipe at D-D' could be approximately 10.0 feet. The report documenting installation of wells MW-1 through MW-3 prepared by Epigene International dated March 31, 1995 states that the elevation for the top of casing of each well was surveyed to mean sea level based on the City of Oakland datum. The elevation for the top of PVC casing for well MW-1 (the well located closest to the former excavation) is 17.15 feet, and the ground surface adjacent to the well box was measured to be 0.5 feet above the top of the PVC casing, which is an elevation of 17.65 feet. If the street surface elevation crowns for drainage at the center of 20th Avenue one additional foot higher than the street surface at the curb in the vicinity of well MW-1, the street surface above the sanitary sewer could be approximately 18.0 feet. The utility trench in 20th Avenue at the intersection of D-D' is shown in the cross section in Figure 3, with a utility elevation of 8.0 feet and an assumed burial of 10.0 feet.

Review of Appendix A also shows that a sanitary sewer pipe is located along the center of Solano Way on the northwest side of 20th Avenue, beginning at a location approximately 140 feet northwest of the former tank excavation, and flowing away from the site to the northwest. The invert elevation of the sanitary sewer at the beginning of the pipe is 15.04 feet, which is approximately 7.04 feet above the invert elevation of the sanitary sewer pipe located beneath 20th Avenue at location D-D'.

Utility depth measurements were obtained by comparing sanitary sewer flow line elevations for manholes for the utility segments of interest that were provided on City of Oakland Storm Drain and Sanitary Sewer Map number 151 with nearby ground surface elevations obtained from City of Oakland elevation map number 151. Determination of surface elevations for features located

between surveyed locations was performed by interpolating between the closest surface elevations. Similarly, the depth of utility burial was calculated by interpolating the utility elevations based on the slope of the utility as determined by the two closest invert elevations. Copies of the referenced maps and their legends and scale are provided in Appendix A.

The year of construction and the associated construction practices for the sanitary sewer pipe trenches are unknown. As described above for storm drain pipe trenches, the current guidelines for trench backfill and bedding are set forth in section 306-1.21 of the City of Oakland 2006 "Greenbook" issued by the City of Oakland Design and Construction Services Department. The Greenbook specifies that the trench width is the pipe diameter plus a 9-inch minimum for each side of the pipe. The trench bedding consists of ¾-inch diameter crushed rock placed to a depth of 3 inches below the bottom of the outside of the pipe. The crushed rock bedding material surrounds the pipe and extends to a maximum height of 12 inches above the top of the outside of the pipe. Backfill material above the bedding material consists of jetted sand with a diameter equivalent to sieve #20 or greater. A Trench Detail diagram provided by the City of Oakland Design and Construction Services Department is provided in Appendix A. However it is unknown if any of these utility trenches were constructed using these construction practices.

Water Supply Pipes

Water supply pipes in the site vicinity are owned and operated by the East Bay Municipal Utility District (EBMUD). P&D personnel spoke with Mr. Pat Clinton of EBMUD on April 25, 2005 regarding standard trench details. Mr. Clinton stated that the depth of burial for EBMUD water supply pipes is typically 3 feet below the surface for main pipes, and 2 to 3 feet below the surface for laterals. Backfill is typically 3 inches of sand placed below the pipe, and 3 to 6 inches of sand placed above the pipe. If the pipe is located in the street, aggregate baserock is used as fill from the top of the sand to the bottom of the concrete or asphalt driving surface.

On January 9, 2009 Mr. Rolly Mercurio of EBMUD was contacted to provide a plan view map of the EBMUD water supply pipes in the site vicinity and a cross section along 20th Avenue, between International Blvd. and E 12th Street. Only a plan view map (EBMUD map number 1497B472) was available which is provided in 2 pieces and is attached as Appendix B. Mr Mercurio stated that, as a general rule, the depth of burial for EBMUD water supply pipes is typically 3 to 4 feet below the ground surface. Trench width is typically 44 inches and pea gravel is typically used as bedding below the pipes. Review of Appendix B and Figure 2 shows that water supply pipes are located in 20th Avenue approximately 11 feet from the west edge of the street curb and 13 feet from the east edge of the street curb.

On January 15, 2009 Ms. Vanessa Ladson of EBMUD pipeline infrastructure support was contacted for water supply pipe specifications associated with the map obtained from EBMUD for the vicinity of the subject site. Ms. Ladson stated that the pipe located near the west edge of the street curb is a 30-inch diameter steel mortar lined, mortar coated pipe installed in 1950, and the

estimated depth of the water supply pipe trench is approximately 4.0 feet. The pipe located near the east edge of the street curb is a 6-inch diameter cast iron pipe installed in 1928, and the estimated depth of the water supply pipe trench is approximately 3.5 feet. Ms. Ladson stated that the trench width for pipes with an outside diameter of 20-inches or greater cannot exceed two times the pipe outside diameter, therefore, it is assumed that for the 30-inch outside diameter pipe, the trench width does not exceed 60 inches. Ms. Ladson stated that the trench width for pipes with an outside diameter of 16-inches or smaller cannot exceed the pipe outside diameter plus 24 inches, therefore, it is assumed that for the 6-inch outside diameter pipe the trench width does not exceed 30 inches. The utility trench in 20th Avenue at the intersection of D-D' is shown in the cross section in Figure 3.

Natural Gas Pipes

Natural gas pipes in the site vicinity are owned and operated by PG&E. A utility map obtained from PG&E showing the horizontal locations of natural gas pipes in the site vicinity is attached as Appendix C.

On October 10, 2008, P&D contacted Mr. Anthony Thompson of PG&E for information about depths and trench construction practices for the natural gas pipes. Mr. Thompson stated that PG&E natural gas pipes are typically buried in trenches two to three feet in total depth that are 36 inches in width, and that two to four inches of sand fill is typically placed beneath the pipes. Mr. Thompson also stated that onsite backfill is used to fill the remaining portion of the trench if it passes their soil testing requirements. Otherwise 12 inches of imported material is used for backfill on top of the pipes. For trenches containing multiple utilities, gas lines are located at the top, followed by cable TV, then by electric. He stated that it is impossible to know specific trench details without digging at the site.

On January 5th, 2009 Mr. Anthony Thompson of PG&E was contacted to provide a plan view map of the PG&E natural gas pipes along 20th Avenue in the vicinity of the subject site between International Blvd. and E 12th Street. Review of Appendix C and Figure 2 shows that a 2-inch-diameter plastic natural gas pipe is located along 20th Avenue 7 feet from the east edge of the street curb in a trench that is assumed to be 36 inches deep. The trench extends to the south where it changes direction to the east in Solano Way at a location approximately 3 feet south of the northeast corner of the intersection of 20th Avenue and Solano Way. Along 20th Avenue, a lateral extends to the east to the building adjacent to the subject site, approximately 26 feet from the northwest corner of the subject site. Another lateral extends west to the adjacent property across 20th Avenue, approximately 40 feet form the northeast corner of 20th Avenue and Solano Way. Along Solano Way, a lateral extends to the property south of the subject site at a location approximately 32 feet east of 20th Avenue.

Review of files at the offices of J.W. Silveira also identified a natural gas pipe beneath the sidewalk oriented parallel to 20th Avenue in the UST pit excavation located at a distance of three feet from

the subject site building. Additionally, a figure showing the natural gas pipe in the UST pit excavation is also provided in the Results of Soil Sampling During Removal of Two Underground Storage Tanks report dated February 14, 1994 prepared by Epigene International for the subject site. The natural gas pipe is also oriented parallel to 20th Avenue and is located at a distance of three feet from the subject site building. Copies of the figures are provided in Appendix D.

Review of the PG&E natural gas utility map provided in Appendix C and the USA markings that were recorded (See Figure 2) shows that the gas pipe identified in the UST pit excavation is not shown on the PG&E map and was not marked by USA.

Electrical Wires

Electrical wires in the site vicinity are owned and operated by PG&E. Electrical wires are located above ground on utility poles located along the east side of 20th Avenue and along the south side of Solano Way. On January 14, 2009 P&D personnel inspected USA markings which were marked in response to a request to USA to mark underground utilities in the site vicinity. PG&E personnel painted comments in red on 20th Avenue stating that no underground electrical wires are presents at the subject property.

A PG&E utility map (see Appendix E) provided by Mr Thompson during discussions referenced above in the Natural Gas Pipe section shows that no electrical wires in the site vicinity are below ground in the vicinity of the subject site.

Telephone Wires

On January 14, 2009, P&D personnel inspected USA markings which were marked in response to a request to USA to mark underground utilities in the site vicinity, and observed that telephone wires are located above the ground on utility poles located along the east side of 20th Avenue and the south side of Solano Way. Maps showing the locations of telephone utilities were not obtained during this investigation.

HYDROGEOLOGY

Review of Figure 1 shows that the Brooklyn Basin (connected to San Francisco Bay by way of a Tidal Canal to the south and the Oakland Inner Harbor to the north) is located approximately 1,100 feet to the southwest of the subject site, and Sausal Creek is located approximately 4,300 feet to the east of the subject site. Review of Figure 1 also shows that the site is located on a hillside that slopes to the southwest.

Historic groundwater elevation data obtained from wells MW-1 through MW-3 for the subject site are summarized in Appendix F. Prior to 2002, the calculated groundwater elevations in wells MW-1 and MW-3 ranged from approximately 0.4 to -4.9 feet, and in well MW-2 ranged from

approximately -2.0 to -7.7 feet. Review of the water level data from prior to 2002 shows that in 1995 the calculated groundwater elevations in wells MW-1 and MW-3 were approximately -5 feet, and in well MW-2 was approximately -7.5 feet. In 2007 and 2009, the calculated groundwater elevations in the wells were approximately 5 to 6 feet in wells MW-1 and MW-3, and approximately 4 to 5 feet in well MW-2. Since 1995, the water levels in wells MW-1 and MW-3 have increased by approximately 10 to 11 feet, and in well MW-2 have increased by approximately 6.5 to 7.5 feet.

Review of the water level data in the Site Closure Report water level summary table prepared by Tetra Tech shows that the water levels reported for February 9, 2000 are the same as the April 1, 1999 water levels reported in the undated Tetra Tech Additional Site Characterization Report. No purge data sheets or other field documents were available for review with either of the Tetra Tech reports. Based on the reporting of the April 1, 1999 water level data in a report issued prior to the Site Closure Report, it appears that the water levels reported for February 9, 2000 in the summary table in the Site Closure Report were incorrectly reported.

The groundwater flow direction at the subject site has historically been calculated to be to the north-northeast. However, the calculated groundwater flow direction is uphill, and is questionable based on the calculated groundwater elevations in well MW-2. The cause for the lower groundwater surface elevation at well MW-2 appears to be related to the site geology, and is not understood at this time with the available subsurface and regional geologic information.

Review of groundwater flow direction information for nearby sites that have groundwater monitoring wells shows that the groundwater flow direction at 2200 East 12th Street (located approximately 685 feet southeast of the subject site) has historically been to the west-southwest, and the groundwater flow direction at 2345 International Boulevard (located approximately 1,600 feet southeast of the subject site) has historically been to the southwest. Additionally, the groundwater flow direction at 2301 East 12th Street (located approximately 1,440 feet southeast of the subject site) has historically been calculated to be to the northwest. However, the calculated groundwater flow direction at the site on June 4, 2007 was to the west-southwest.

DISCUSSION AND RECOMMENDATIONS

Review of Figure 2 shows that no buried storm drain pipes are located in 20th Avenue or Solano Way. The utility with the deepest burial in the vicinity of the subject site is the sanitary sewer, with a depth of burial of approximately 8.0 or 10.0 feet. Review of historical water levels in Appendix F and the maximum depth of burial of 10.0 feet for the sanitary sewer shown in Figure 3 shows that the water table is below the bottom of the deepest utility in the vicinity of the subject site. Based on these results, buried utilities are not suspected preferential pathways for movement of petroleum hydrocarbons in groundwater in the vicinity of the subject site.

The extent of petroleum hydrocarbons in groundwater is presently not defined. In the event that the extent of groundwater is determined to extend to E 12th Street, P&D recommends that the potential for utilities in the vicinity of the intersection of 20th Avenue and E 12th Street be evaluated as potential conduits for the preferential movement of petroleum hydrocarbons in groundwater.

LIMITATIONS

This report was prepared solely for the use of J.W. Silveira Realty. The content and conclusions provided by P&D in this assessment are based on information collected during our investigation, which may include, but not be limited to, visual site inspections; interviews with the site owner, regulatory agencies and other pertinent individuals; review of available public documents; subsurface exploration and our professional judgment based on said information at the time of preparation of this document. Any subsurface sample results and observations presented herein are considered to be representative of the area of investigation; however, geological conditions may vary between borings and may not necessarily apply to the general site as a whole. If future subsurface or other conditions are revealed which vary from these findings, the newly revealed conditions must be evaluated and may invalidate the findings of this report.

This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information contained herein is brought to the attention of the appropriate regulatory agencies, where required by law. Additionally, it is the sole responsibility of the owner to properly dispose of any hazardous materials or hazardous wastes left onsite, in accordance with existing laws and regulations.

This report has been prepared in accordance with generally accepted practices using standards of care and diligence normally practiced by recognized consulting firms performing services of a similar nature. P&D is not responsible for the accuracy or completeness of information provided by other individuals or entities that is used in this report. This report presents our professional judgment based upon data and findings identified in this report and interpretation of such data based upon our experience and background, and no warranty, either express or implied, is made. The conclusions presented are based upon the current regulatory climate and may require revision if future regulatory changes occur.

Should you have any questions, please do not hesitate to contact us at (510) 658-6916.

Sincerely,

P&D Environmental, Inc.

Paul H. King

Paul H. King
Professional Geologist # 5901
Expires: 12/31/09

Attachments:

Figure 1 – Site Location Map
Figure 2 – Site Vicinity Map Showing Underground Utility and Cross Section Locations
Figure 3 – Cross Section D-D' Showing Utility Trench Locations and Depths

Appendix A - City of Oakland Storm Drain and Sanitary Sewer Utility Maps and Ground Surface Elevation Maps
Appendix B - EBMUD Water Supply Utility Map
Appendix C - PG&E Natural Gas Utility Map
Appendix D – Additional Natural Gas Utility Information
Appendix E - PG&E Electric Utility Map
Appendix F – Historic Groundwater Level Monitoring Data For Wells MW-1 Through MW-3

PHK
0405.R3

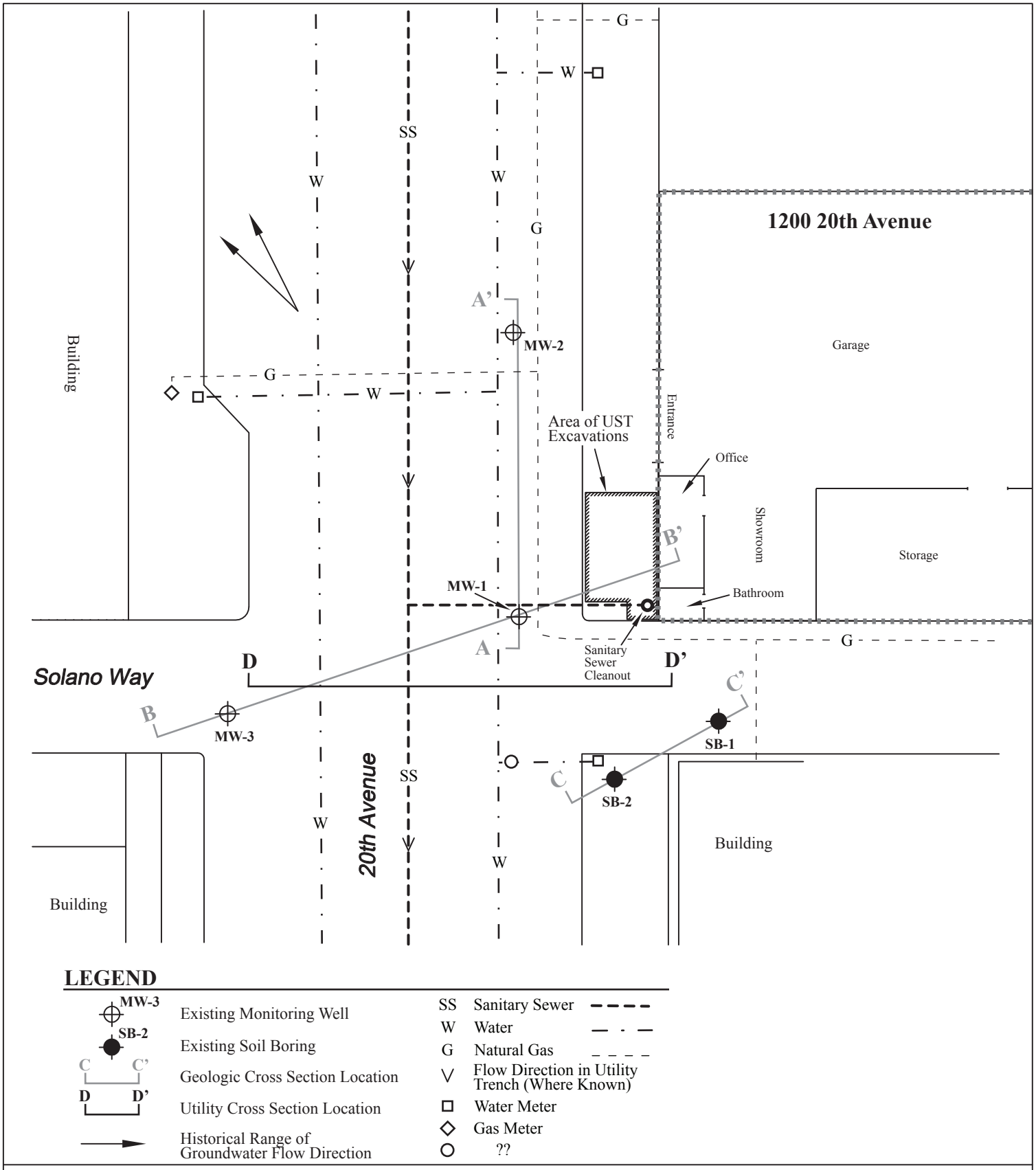
FIGURES

Figure 1
Site Location Map
William Wurzbach Company
1200 20th Avenue
Oakland, California

Base Map From:
U.S.Geological Survey
Oakland East and
Oakland West, California
7.5 Minute Quadrangles
Photorevised 1980

P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

0 1,000 2,000
SCALE IN FEET



LEGEND

MW-3	Existing Monitoring Well	SS	Sanitary Sewer
SB-2	Existing Soil Boring	W	Water
C C'	Geologic Cross Section Location	G	Natural Gas
D D'	Utility Cross Section Location	V	Flow Direction in Utility Trench (Where Known)
→	Historical Range of Groundwater Flow Direction	□	Water Meter
		◇	Gas Meter
		○	??

Figure 2
Site Vicinity Map Showing Underground Utility and Cross Section Locations
William Wurzbach Company
1200 20th Avenue
Oakland, California

N

Base Map From: Tetra Tech EM Inc. Site Location Map	P&D Environmental, Inc. 55 Santa Clara Avenue, Suite 240 Oakland CA 94610	0 10 20 SCALE IN FEET

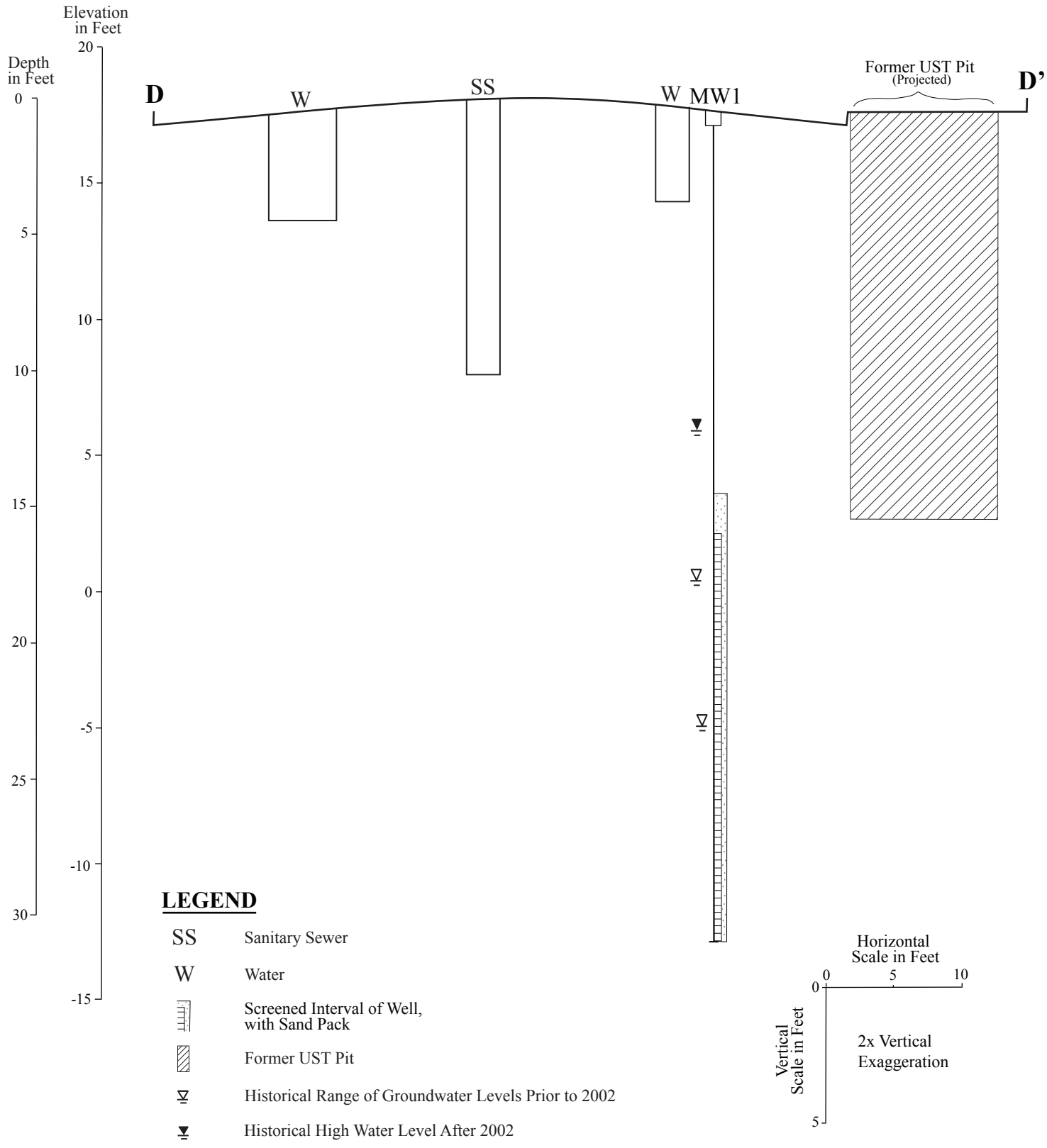
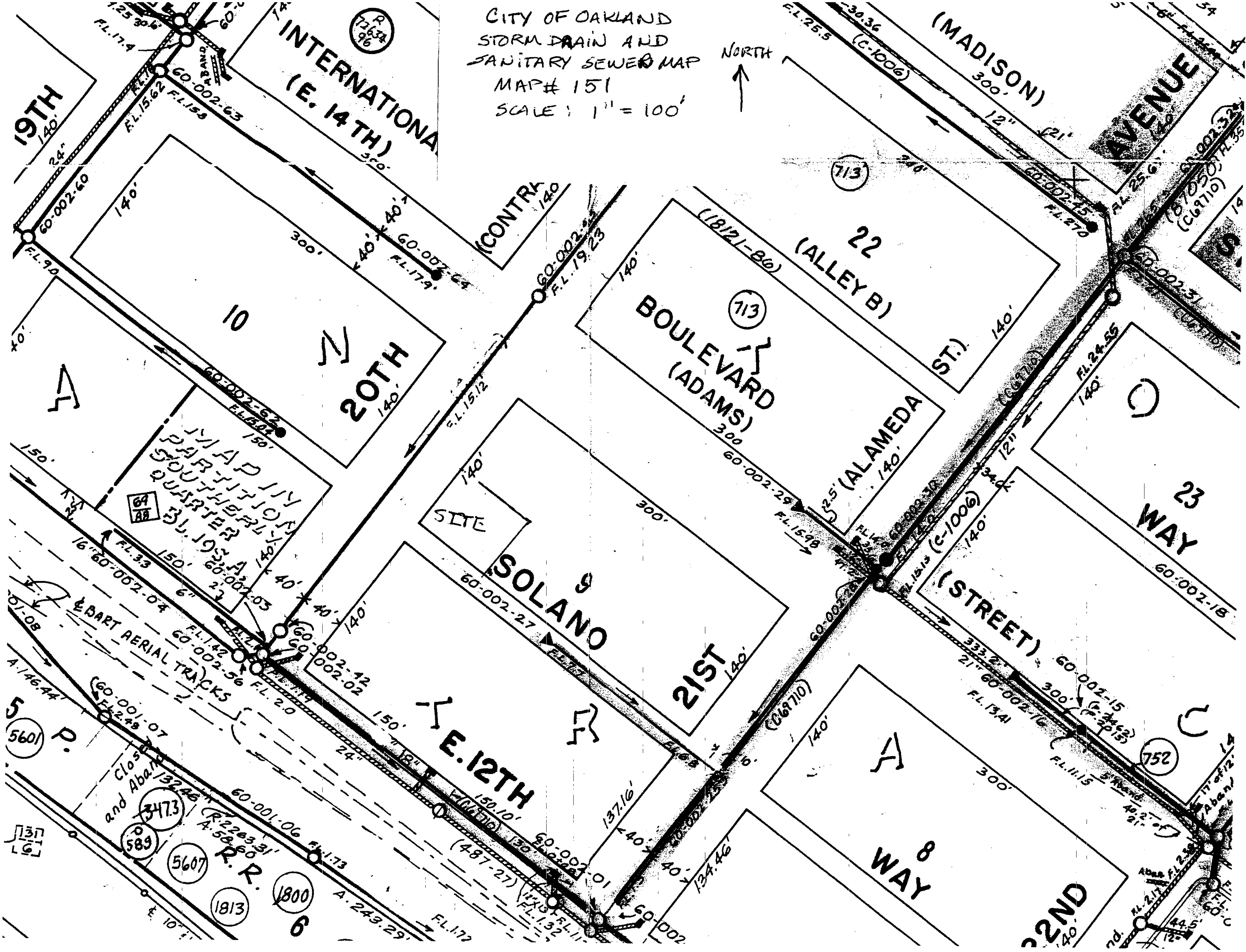


Figure 3
Cross Section D-D' Showing Utility Trench Location and Depth
William Wurzbach Company
1200 20th Avenue
Oakland, California

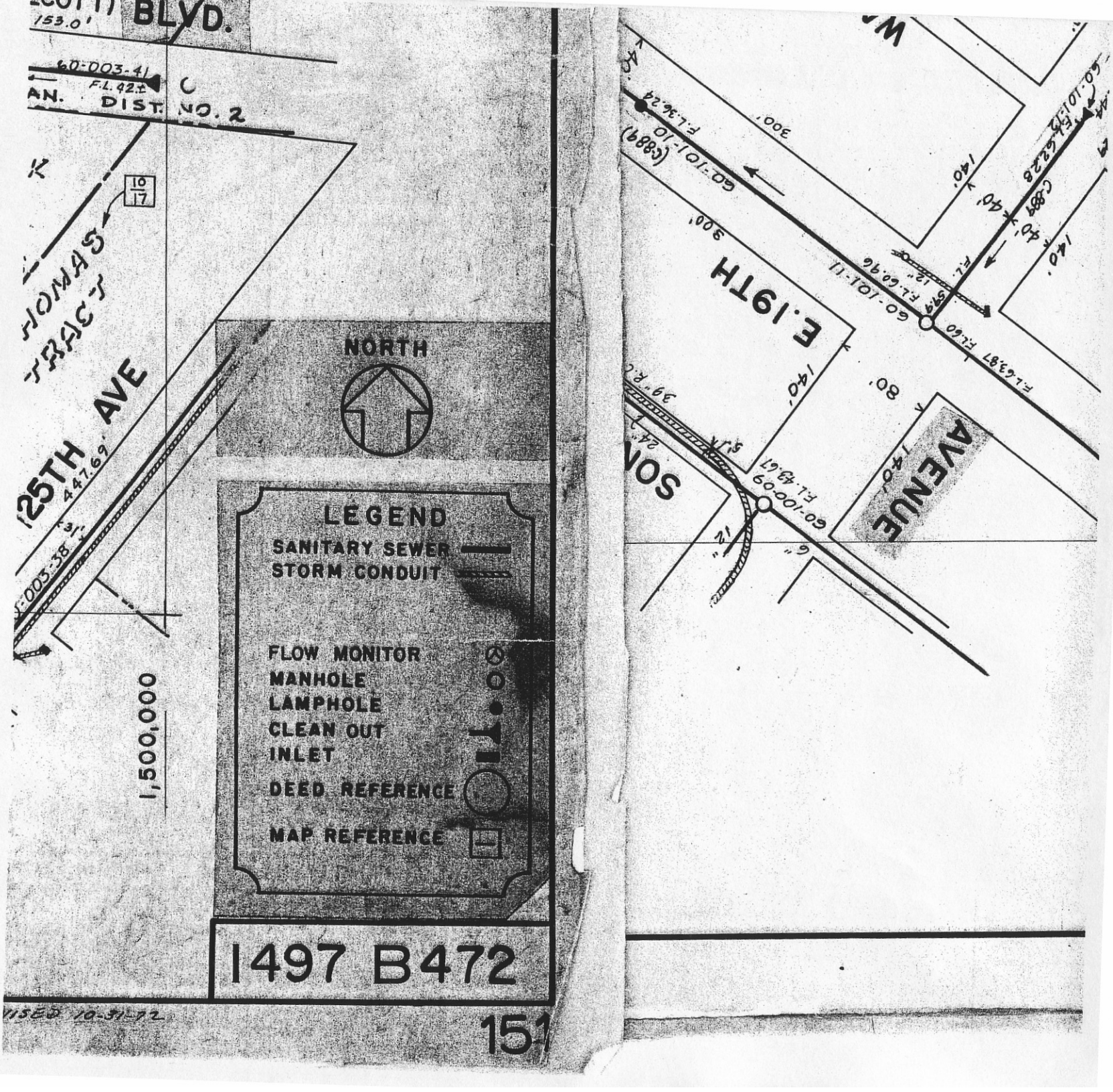
P&D Environmental, Inc.
55 Santa Clara Ave., Suite 240
Oakland, CA 94610

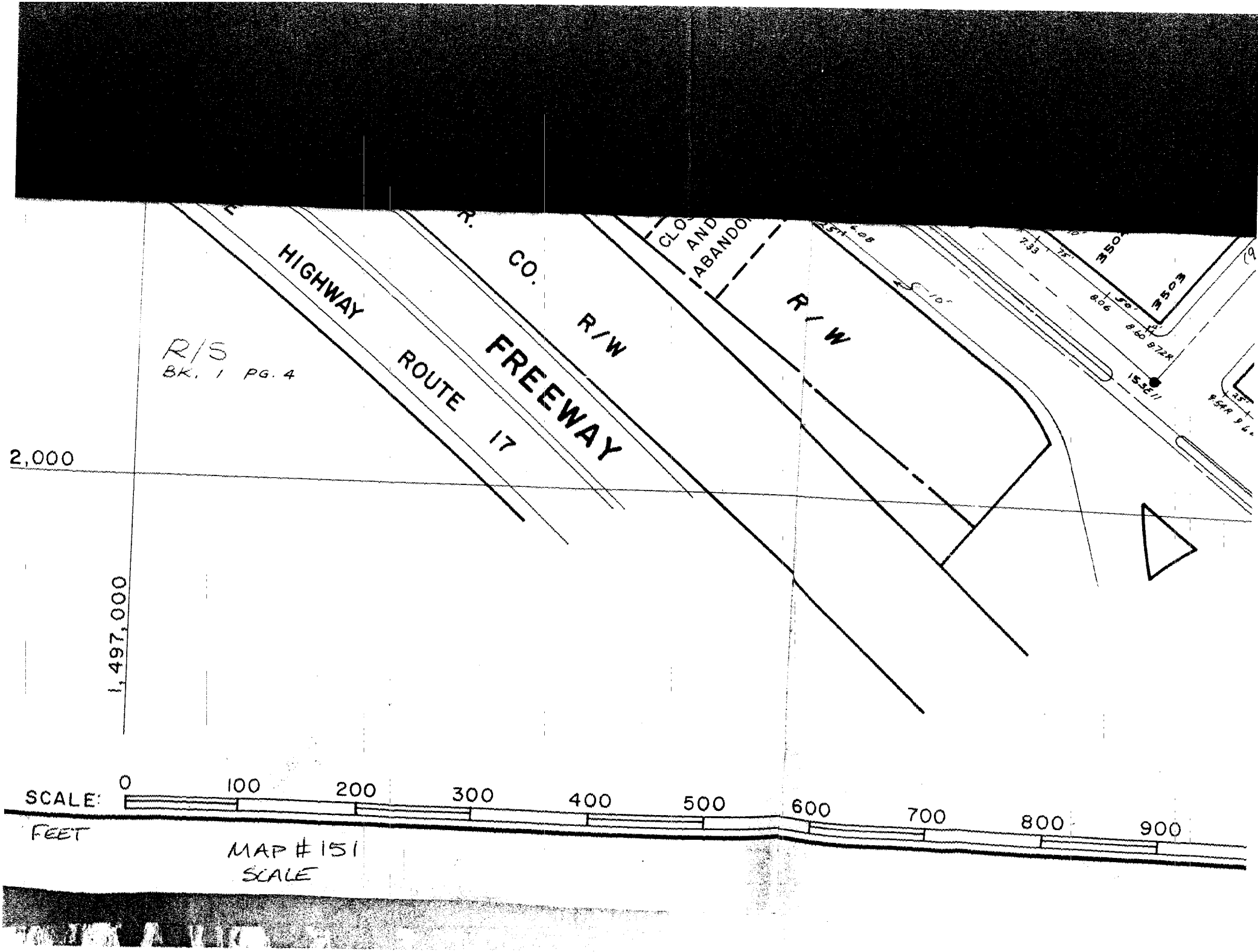
APPENDIX A
City of Oakland Storm Drain and Sanitary Sewer Utility Maps and Ground Surface Elevation Maps

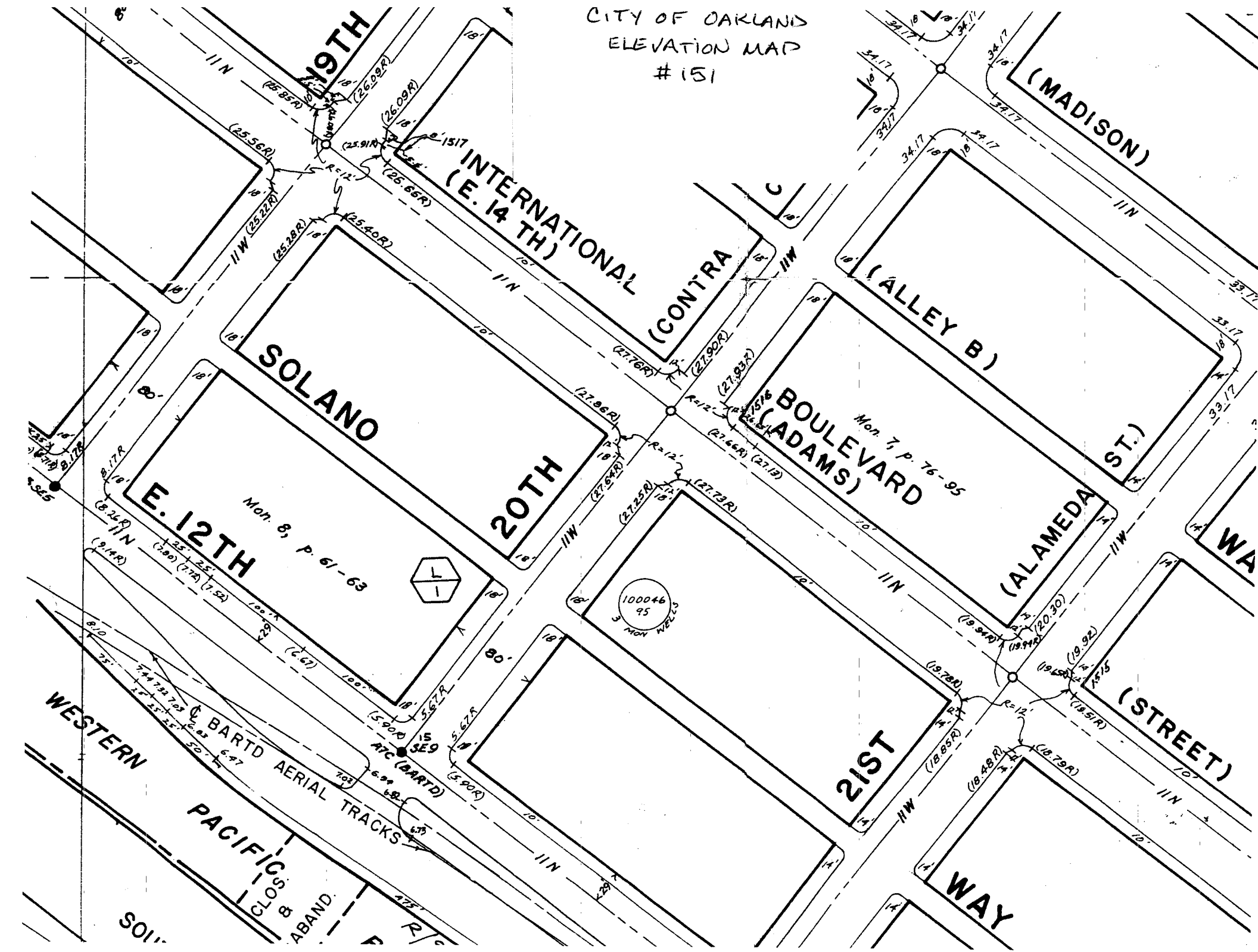

CITY OF OAKLAND
STORM DRAIN AND
SANITARY SEWER MAP
MAP# 151
SCALE: 1" = 100'
NORTH
INTERNATIONAL
(E. 14TH)
19TH
20TH
21ST
22ND
(CONTRA
BOULEVARD
(ADAMS)
(ALLEY B)
ST.)
(MADISON)
AVENUE
(ALAMEDA
SOLANO
(STREET)
23
WAY
8
WAY
9
10
22
E.12TH
R.R.
BART AERIAL TRACKS
MAP IN
PARTITION
SOUTHERLY
QUARTER
SITE
Close and Aband.
60-002-63
60-002-60
60-002-64
60-002-62
60-002-04
60-002-03
60-002-36
60-002-42
60-002-02
60-002-27
60-002-29
60-002-28
60-002-30
60-002-31
60-002-18
60-002-15
60-002-16
60-002-01
60-002-75
60-001-07
60-001-06
(C-1006)
(C69710)
(487-27)
(18121-86)
5601
5607
3473
589
1813
1800
713
752
300'
140'
150'
40'

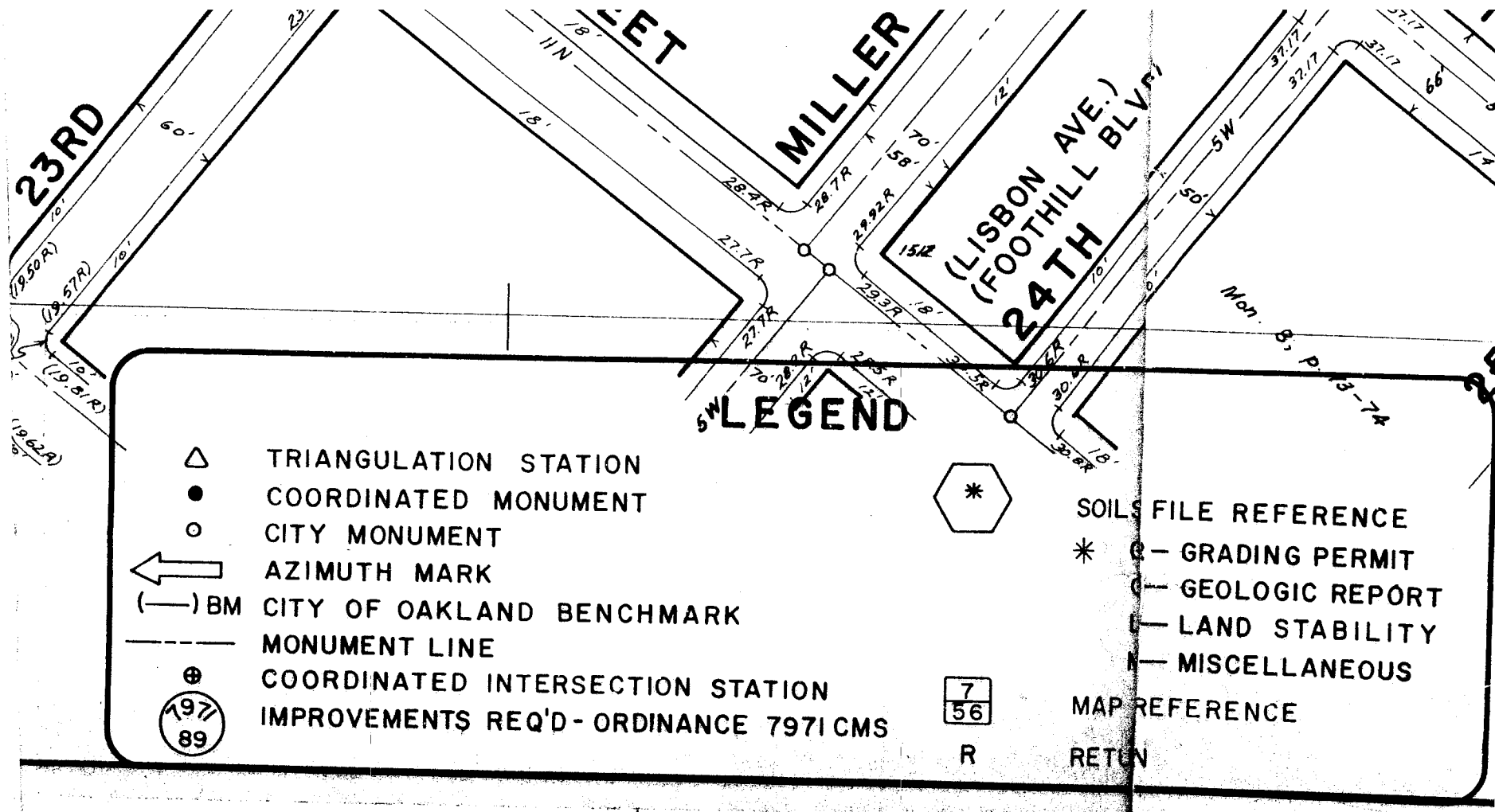
MAP # 151

LEGEND




HIGHWAY
ROUTE 17
FREEWAY
R/W
CO.
R/W
R/S
BK. 1 PG. 4
2,000
1,497,000
SCALE:
0
100
200
300
400
500
600
700
800
900
FEET
MAP # 151
SCALE


CITY OF OAKLAND
ELEVATION MAP
#151
19TH
INTERNATIONAL
(E. 14 TH)
(CONTRA
(MADISON)
(ALLEY B)
SOLANO
20TH
E. 12TH
Mon. 8, P. 61-63
BOULEVARD
(ADAMS)
Mon. 7, P. 76-95
(ALAMEDA
ST.)
21ST
(STREET)
WAY
WESTERN
PACIFIC
CLOS & ABAND.
BARTD AERIAL TRACKS
ATC (BARTD)
15
3E9
100046
95
3 MON WELLS
80'
11N
11W
10'
18'
14'
R=12'
(25.56R)
(25.91R)
(26.09R)
(25.66R)
(25.40R)
(25.28R)
(25.22R)
(27.76R)
(27.90R)
(27.93R)
(27.86R)
(27.64R)
(27.66R)
(27.12)
(27.25R)
(27.73R)
(19.94R)
(20.30)
(19.92)
(19.78R)
(18.65R)
(18.48R)
(18.79R)
(18.51R)
(5.90R)
5.67R
(6.67)
100'
X29
X5.15
475'

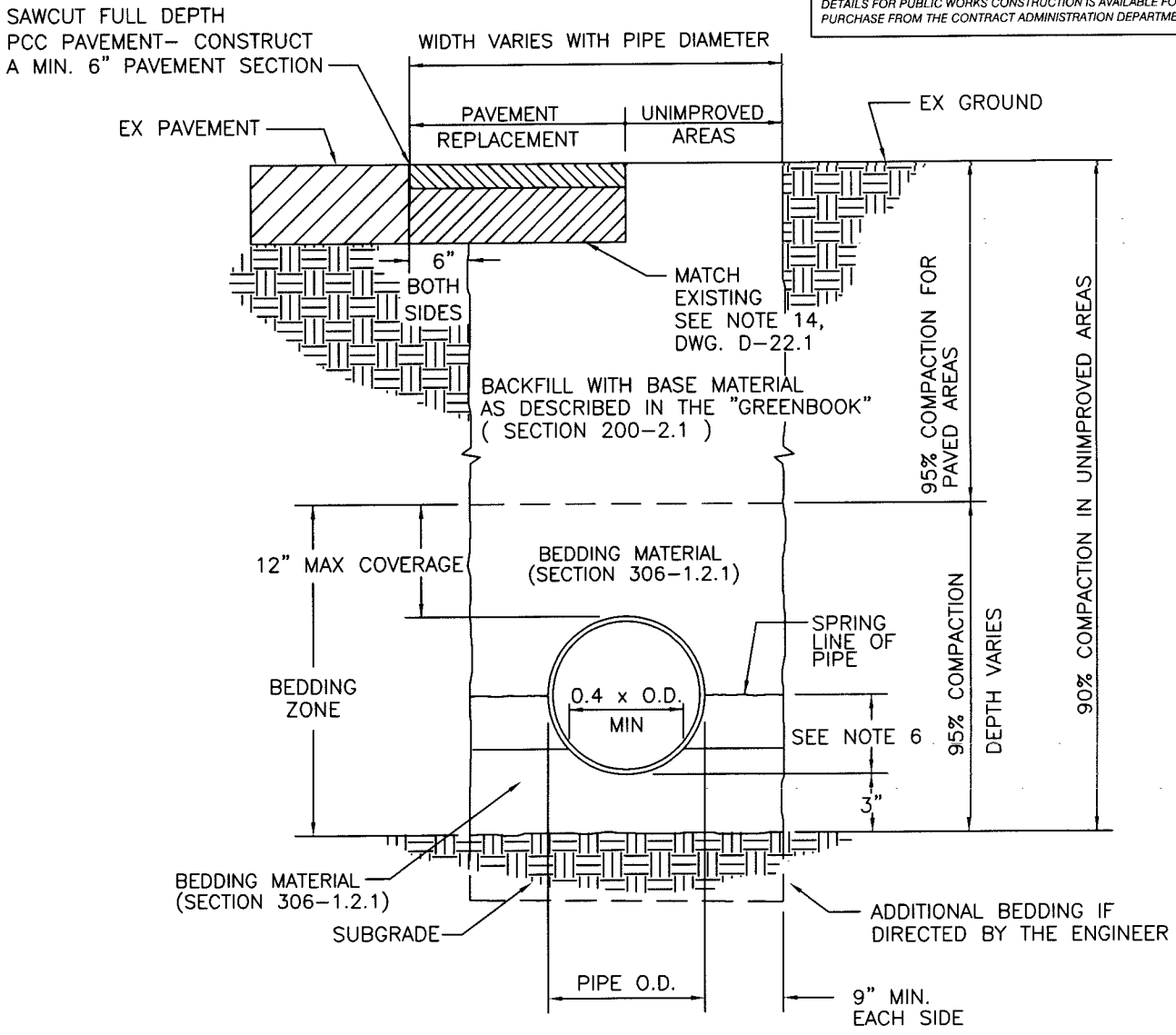


CITY OF OAKLAND
ELEVATION MAP #151
LEGEND

PAVEMENT TYPES

TYPE A	TYPE B	TYPE C	TYPE D	TYPE F
6" P.C.C . PER SECTION 201–1.1.2	3" A.C. PER SECTION 306–1.5.2	4" A.C. PER SECTION 306–1.5.2	3" A.C. PER SECTION 306–1.5.2	VARIABLE DEPTH A.C. PER SECTION 306–1.5.2
	6" P.C.C . PER SECTION 201–1.1.2			
18" A.B. PER SECTION 306–1.3.1	12" A.B.PER SECTION 306–1.3.1	18" A.B. PER SECTION 306–1.3.1	18" A.B. PER SECTION 306–1.3.1	

NOTE: THIS PLAN IS NOT A LEGAL ENGINEERING DOCUMENT BUT AN ELECTRONIC DUPLICATE. THE SIGNED CITY OF OAKLAND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION IS AVAILABLE FOR PURCHASE FROM THE CONTRACT ADMINISTRATION DEPARTMENT.



CITY OF OAKLAND | DESIGN AND CONSTRUCTION SERVICES DEPARTMENT

TRENCH DETAIL

ENGINEERING DESIGN MANAGER

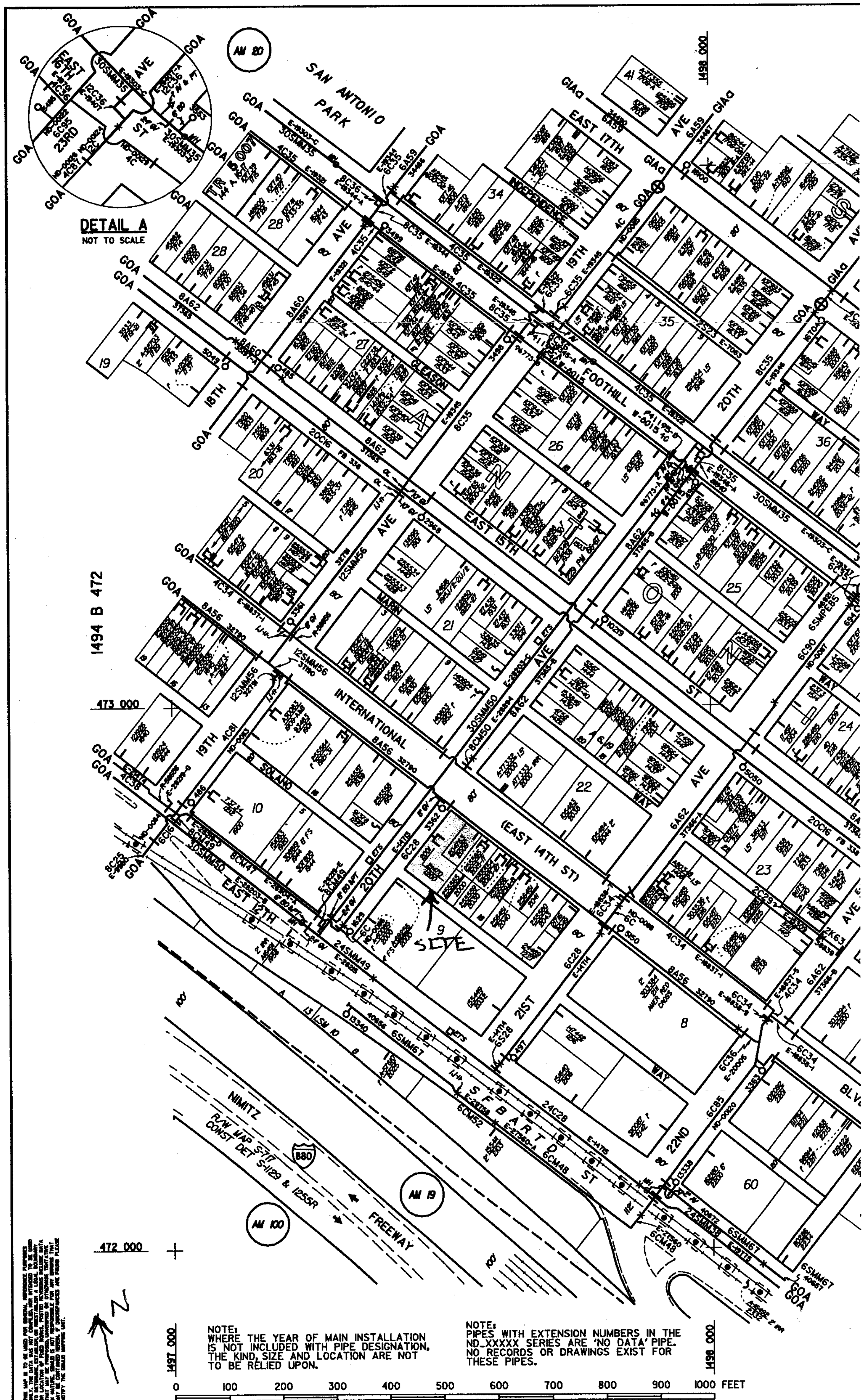
DATE: JANUARY 2002

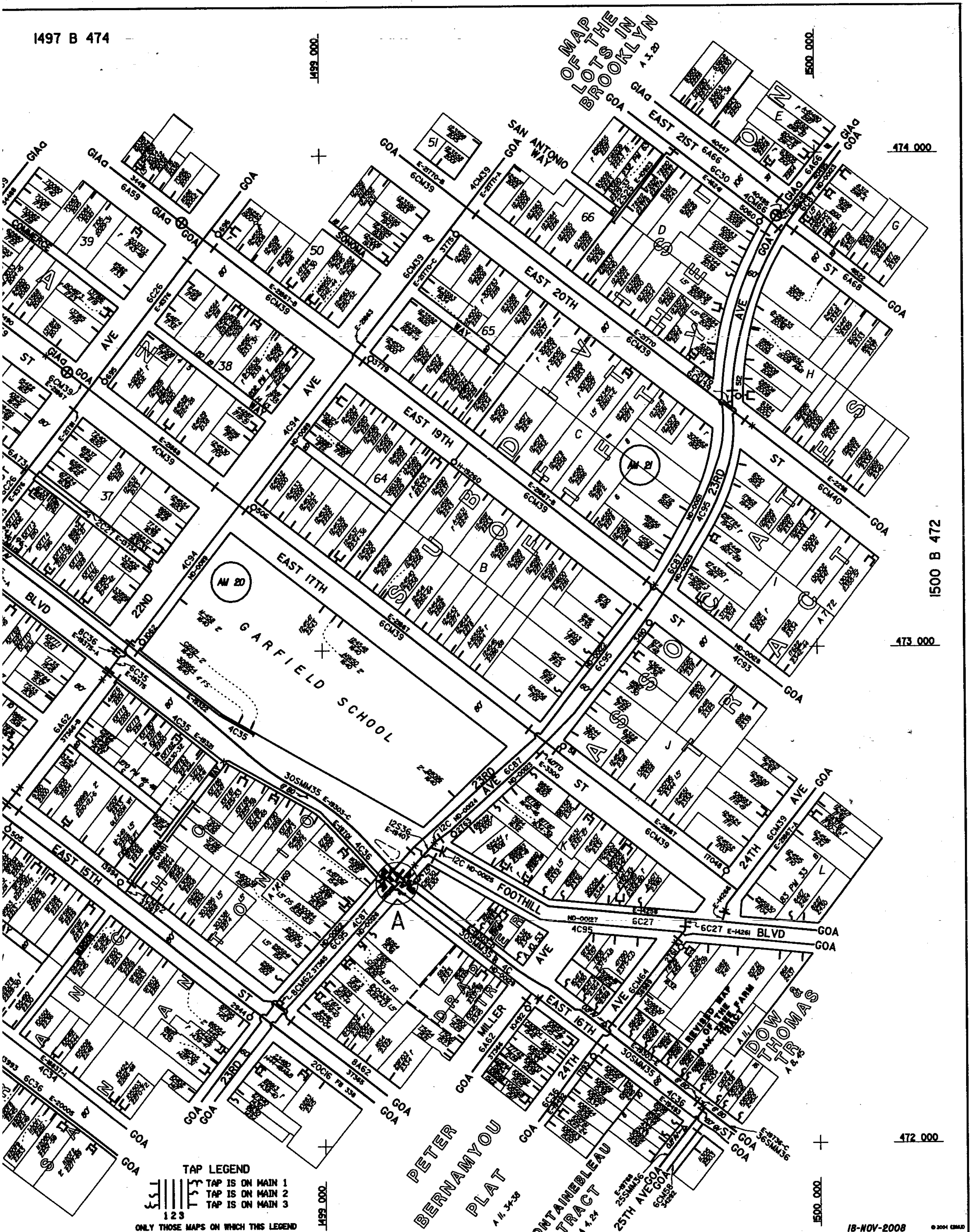
REV. DATE: _____

DWG. D-22.0

APPENDIX B
EBMUD Water Supply
Utility Map

EBMUD


DETAIL A
NOT TO SCALE
SAN ANTONIO PARK
EAST 17TH
EAST 15TH
EAST 12TH
(EAST 14TH ST)
INTERNATIONAL
FOOTHILL
GLEASON
SOLANO
NIMITZ
FREEWAY
S F B A R T D
18TH
19TH
20TH
21ST
22ND
AVE
ST
WAY
BLVD
SITE
1494 B 472
473 000
472 000
1497 000
1498 000
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 ND_XXXXX SERIES ARE 'NO DATA' PIPE. NO RECORDS OR DRAWINGS EXIST FOR THESE PIPES.
0 100 200 300 400 500 600 700 800 900 1000 FEET
N

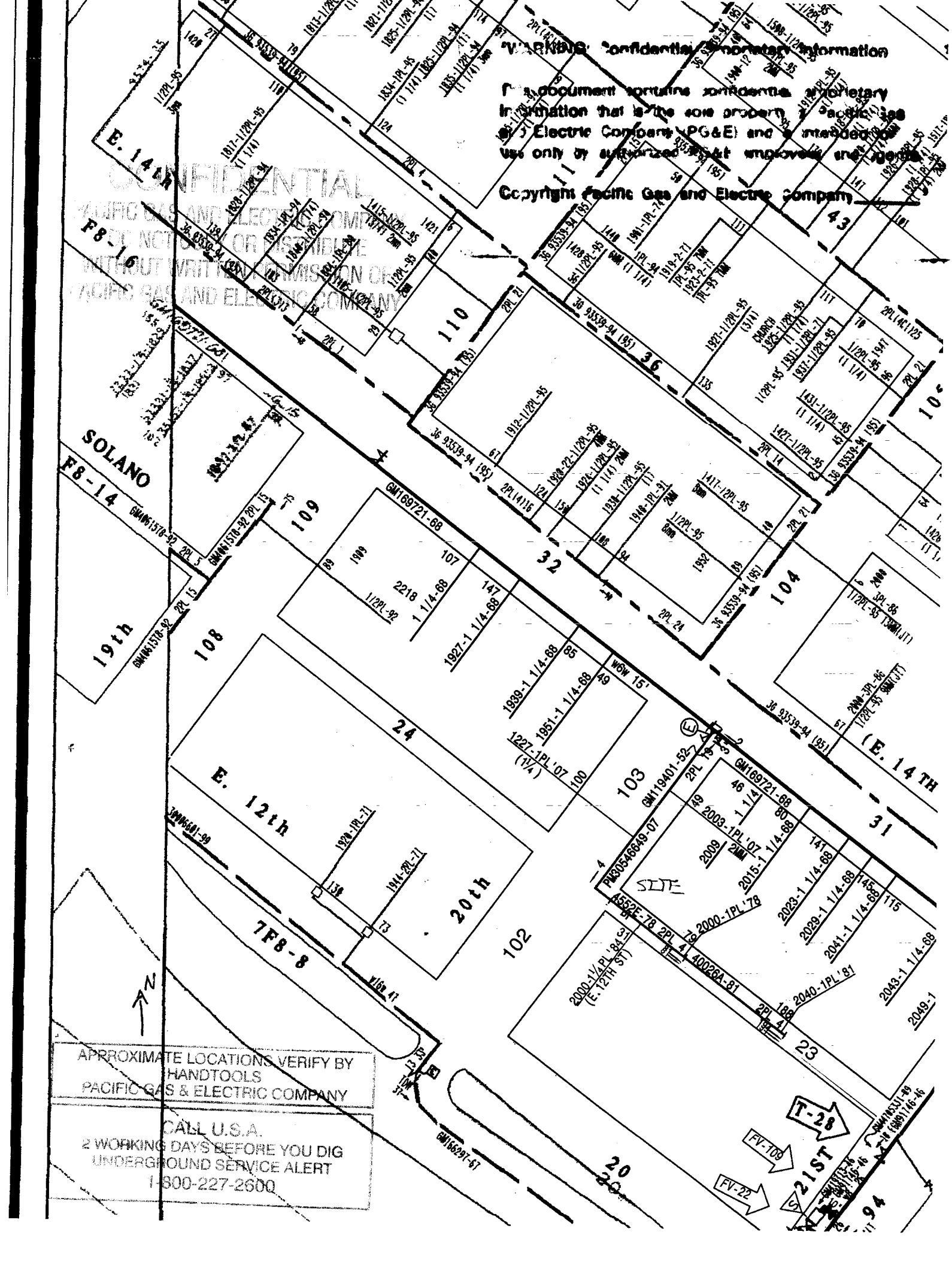


1497 B 470

CITY	OAKLAND	STRUCTURE	DESIGNATION	NAME	FL. ELEV.	CAP. IN M.G.	PRESSURE ZONE	FLOW ELEV.	DATE ISSUED	OCT 2003
COUNTY	ALAMEDA						GOA CENTRAL	202	1497B472	
U.S.G.S.	OAKLAND EAST						GIAa AQUEDUCT	350		

EAST BAY MUNICIPAL UTILITY DISTRICT

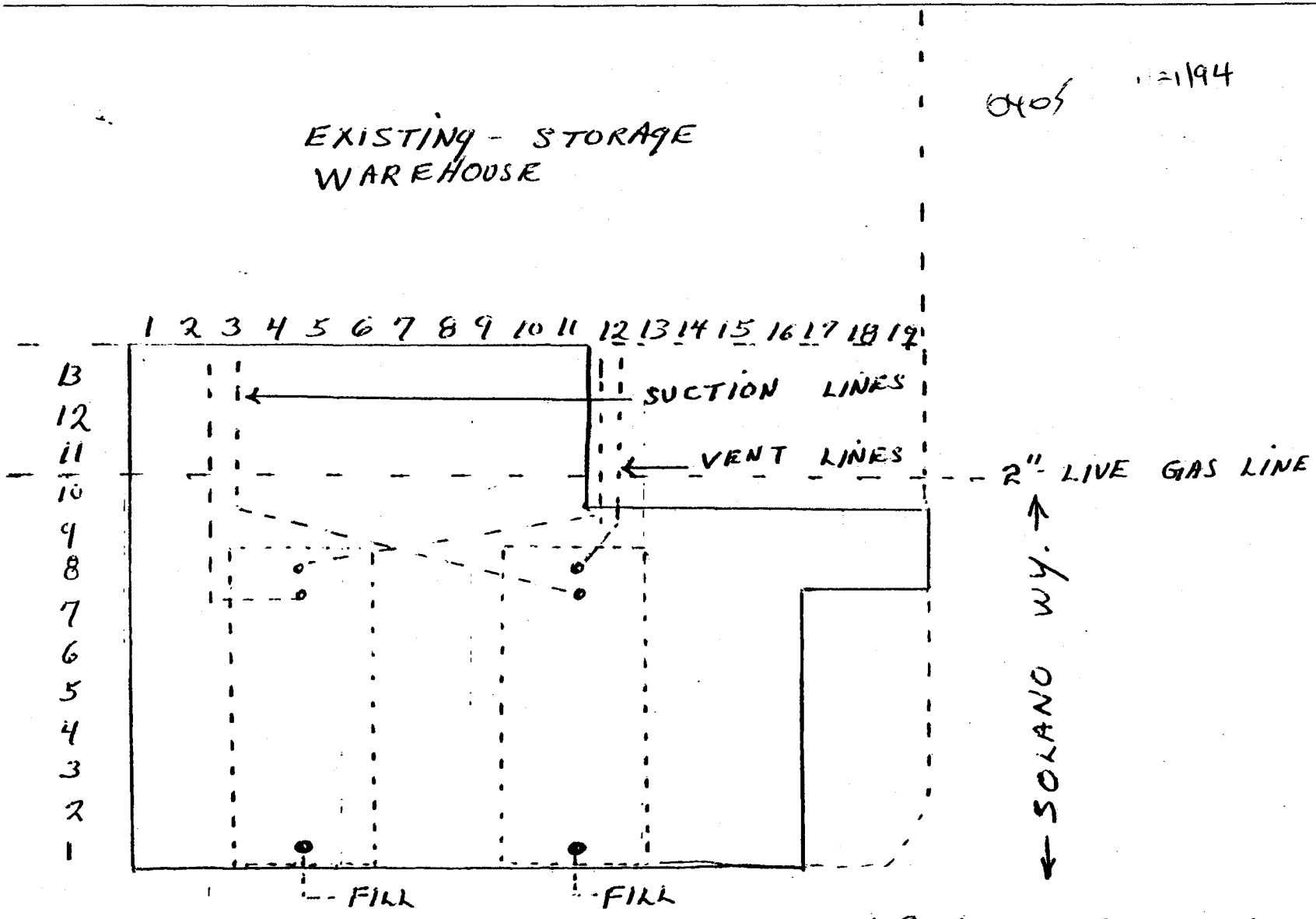
APPENDIX C
PG&E Natural Gas
Utility Map



APPENDIX D
Additional Natural Gas Utility Information

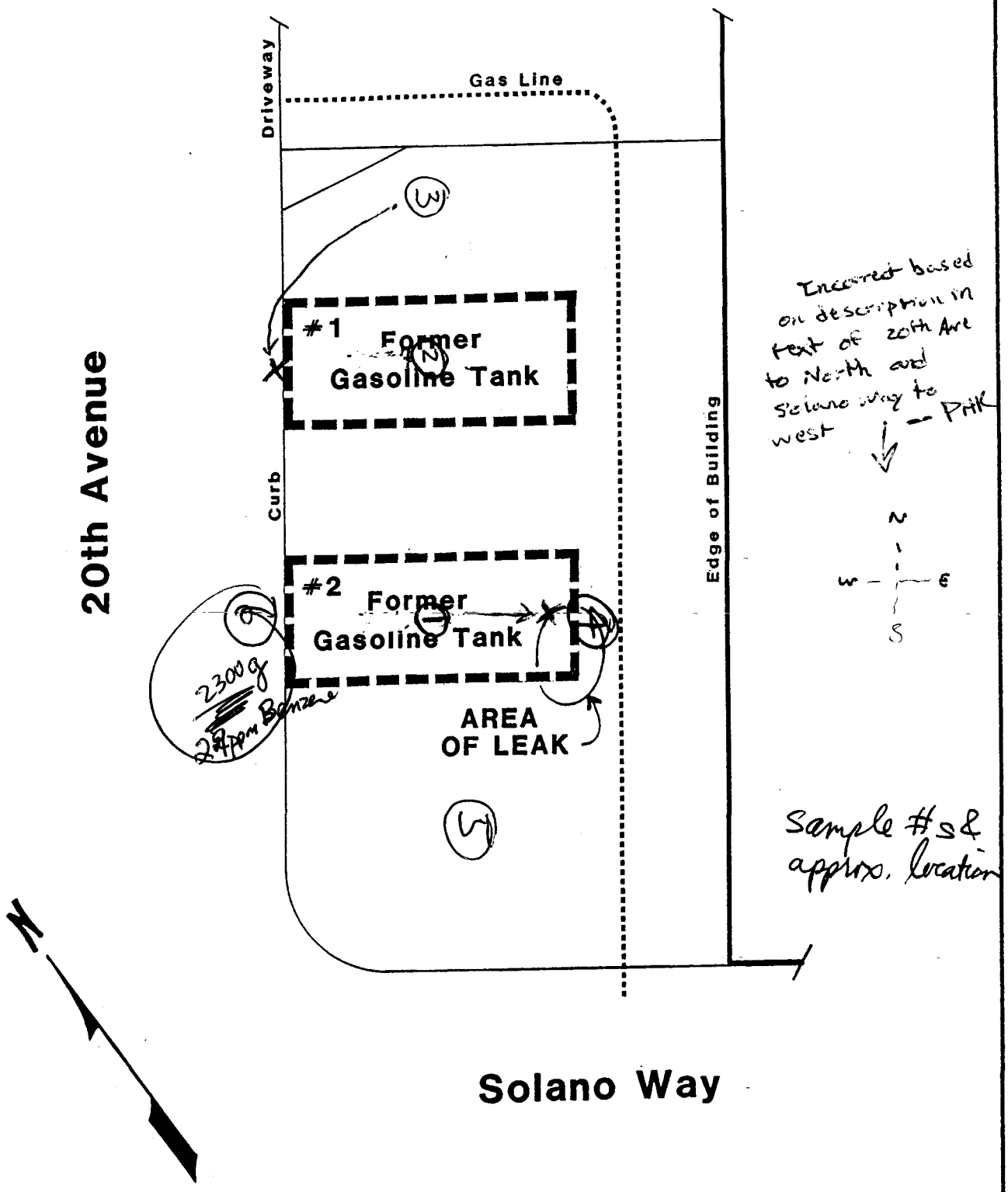
- **From J.W. Silveira Realty File Review**

- **From Results of Soil Sampling During Removal of Two Underground Storage Tanks Report dated February 14, 1994.**



1 9 4 SQUARE FEET
OVER ALL CONCRETE
REPLACEMENT.

L.W. SILVIERA PROPERTIES
1200 - 20TH AVE
OAKLAND, CA. 94606



EPIGENE INTERNATIONAL	Project #94067 1200 20th Avenue, Oakland, California.

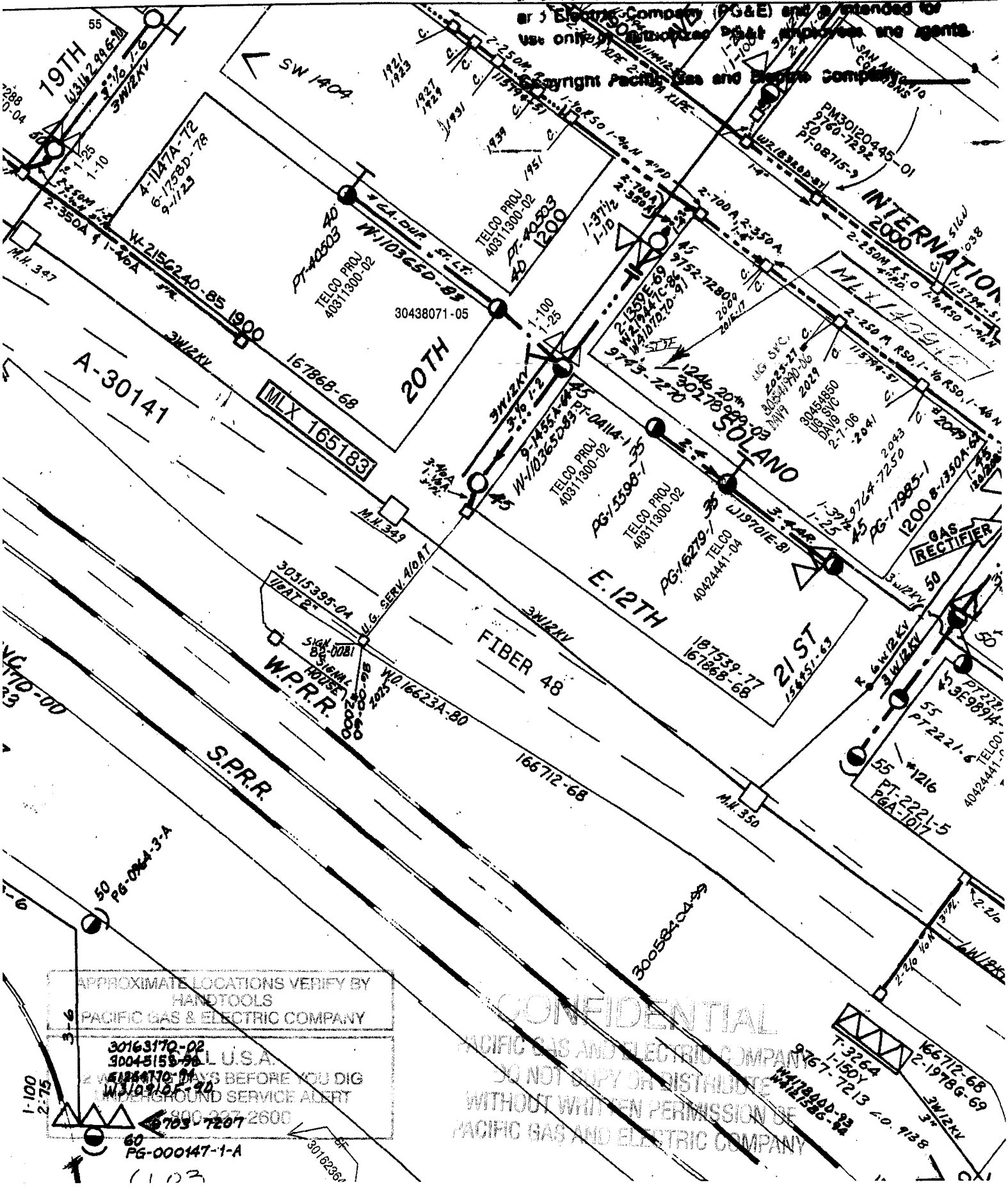
Fig. 3

SITE PLAN

APPENDIX E
PG&E Electric Utility Map

ELECTRIC DISTRIBUTION MAP

SCALE 1" = 100' ZONE 3



APPENDIX F
Historic Groundwater Level Monitoring Data For Wells MW-1 Through MW-3

Table 1. Well Monitoring Data

Well Number	Date Monitored	* Top of Casing Elevation (ft-msl.)	Depth to Water (ft)	Water Table Elevation (ft-msl.)
MW1	6/6/2007	17.15	11.23	5.92
MW2	6/6/2007	20.11	15.36	4.75
MW3	6/6/2007	16.06	10.39	5.67

Abbreviations and Notes:

ft-msl = feet above mean sea level

ft = feet

* = From Epigene International Consulting March 31, 1995 Installation of Monitoring Wells and First Quarter Monitoring report.

Appendix A
Historic Groundwater Levels

Well Number	Date Monitored	*Top of Casing Elevation (ft-msl)	Depth to Water (ft)	Groundwater Elevation (ft-msl)
MW-1	1/5/2009	17.15	**11.90**	5.25
	6/6/2007		**11.23**	5.92
	8/30/2001		19.53	**-2.38**
	12/18/2000		19.60	**-2.45**
	9/27/2000		19.93	**-2.78**
	5/23/2000		16.73	**0.42**
	2/9/2000		17.08	**0.07**
	4/1/1999		17.08	**0.07**
	Jul-98	No Report with Data Available for Review		
	Jan-97	No Report with Data Available for Review		
	Sep-96	No Report with Data Available for Review		
	Jun-96	No Report with Data Available for Review		
	Feb-96	No Report with Data Available for Review		
	Oct-95	No Report with Data Available for Review		
	Jun-95	No Report with Data Available for Review		
	3/7/1995		**22.09**	-4.94
	2/22/1995		**21.98**	-4.83

NOTES:
ft-msl = feet above mean sea level
ft = feet
***** = From Epigene International Consulting March 31, 1995 Installation of Monitoring Wells and First Quarter Monitoring report.
Values in **BOLD** are reported values; values not in bold are calculated from reported values.
Groundwater elevation for 4/1/99 obtained from undated Tetratech Additional Site Characterization Report.
Groundwater elevation for 2/9/00 obtained from summary table in December 2003 Tetratech Site Closure Report.

Table 3
Historic Groundwater Levels
(Continued)

Well Number	Date Monitored	*Top of Casing Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft-msl)
MW-2	1/5/2009	20.11	**16.12**	3.99
	6/6/2007		**15.36**	4.75
	8/30/2001		24.62	**-4.51**
	12/18/2000		25.05	**-4.94**
	9/27/2000		25.05	**-4.94**
	5/23/2000		22.14	**-2.03**
	2/9/2000		22.61	**-2.50**
	4/1/1999		22.61	**-2.50**
	Jul-98	No Report with Data Available for Review		
	Jan-97	No Report with Data Available for Review		
	Sep-96	No Report with Data Available for Review		
	Jun-96	No Report with Data Available for Review		
	Feb-96	No Report with Data Available for Review		
	Oct-95	No Report with Data Available for Review		
	Jun-95	No Report with Data Available for Review		
	3/7/1995		**27.63**	-7.52
	2/22/1995		**27.82**	-7.71

NOTES:
ft-msl = feet above mean sea level
ft = feet
***** = From Epigene International Consulting March 31, 1995 Installation of Monitoring Wells and First Quarter Monitoring report.
Values in **BOLD** are reported values; values not in bold are calculated from reported values.
Groundwater elevation for 4/1/99 obtained from undated Tetratech Additional Site Characterization Report.
Groundwater elevation for 2/9/00 obtained from summary table in December 2003 Tetratech Site Closure Report.

Table 3
Historic Groundwater Levels
(Continued)

Well Number	Date Monitored	*Top of Casing Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft-msl)
MW-3	1/5/2009	16.06	**11.03**	5.03
	6/6/2007		**10.39**	5.67
	8/30/2001		18.60	**-2.54**
	12/18/2000		19.04	**-2.98**
	9/27/2000		18.72	**-2.66**
	5/23/2000		15.91	**0.15**
	2/9/2000		16.16	**-0.10**
	4/1/1999		16.16	**-0.10**
	Jul-98	No Report with Data Available for Review		
	Jan-97	No Report with Data Available for Review		
	Sep-96	No Report with Data Available for Review		
	Jun-96	No Report with Data Available for Review		
	Feb-96	No Report with Data Available for Review		
	Oct-95	No Report with Data Available for Review		
	Jun-95	No Report with Data Available for Review		
	3/7/1995		**21.04**	-4.98
	2/22/1995		**21.00**	-4.94

NOTES:
ft-msl = feet above mean sea level
ft = feet
***** = From Epigene International Consulting March 31, 1995 Installation of Monitoring Wells and First Quarter Monitoring report.
Values in **BOLD** are reported values; values not in bold are calculated from reported values.
Groundwater elevation for 4/1/99 obtained from undated Tetratech Additional Site Characterization Report.
Groundwater elevation for 2/9/00 obtained from summary table in December 2003 Tetratech Site Closure Report.