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Facsimile Number: (510) 569 - 4757**DOCUMENT SENT FROM: ROBERT CAMPBELL; RESNA/San Jose****3315 Almaden Expressway #34, San Jose, California 94118 (408) 264-7723****Facsimile Number: (408) 264-2435****Date Sent: 12/28/92 Time Sent: 4:45 PM****DELIVER: Immediately Same Day****CONFIRMATION OF RECEIPT REQUESTED: Yes No**
*(Recipient to call sender upon receipt.)***DOCUMENT DESCRIPTION: Addendum to Work Plan for slurry wall construction at ARCO Station 4494, 566 Hegenberger Road in Oakland, California.**

NUMBER OF PAGES (INCLUDING TRANSMITTAL SHEET): 6



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ST10 3859

December 28, 1992
1228MWHE
69038.13

Mr. Mike Whelan
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Subject: Addendum to Work Plan to Construct an Interim Slurry Wall at ARCO Station 4494, 566 Hegenberger Road in Oakland, California.

Mr. Whelan:

As requested by ARCO Products Company (ARCO), this letter has been prepared by RESNA Industries Inc. (RESNA) to serve as an Addendum to Work Plan to construct a slurry wall in an attempt to help prevent further migration of the black hydrocarbon product apparently originating from offsite, near the former underground gasoline storage tank (UST) pit at the subject site. During removal of the USTs at the subject site, black hydrocarbon product was noted seeping from the storm drain backfill into the tank pit. The location of the site is shown on the Site Vicinity Map, Plate 1.

The proposed interim work includes excavating a 1-foot wide trench, two feet away from the exposed 6-foot diameter storm drain and three feet below groundwater (approximately 11 feet below ground surface). The trench will be excavated near the eastern site boundary and extend for approximately 25 feet to the west. Once the bottom of the trench has been completed, excavated soil from the former UST pit will be used as a concrete form, allowing a width of one foot and a height three feet below ground surface (top of the storm drain). This form will then be lined with two layers of visqueen and supported with wire-mesh. A concrete slurry will then be poured into the form and allowed to set. The soil form surrounding the concrete will be removed and returned to the appropriate soil pile. A 6-inch diameter recovery well (RW-1) will be placed between the slurry wall and the storm drain to collect and remove the hydrocarbon product on a periodic basis. A Homer EZY Floating Product Skimmer will be installed in RW-1 to provide interim remediation.

RESNA

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December 28, 1992

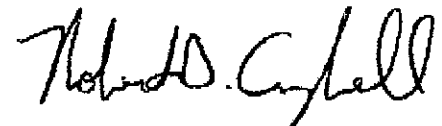
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Addendum to Work Plan
ARCO Station 4494, Oakland, California

The slurry wall is an attempt to prevent migration of the offsite hydrocarbon product onsite and impacting the former UST pit. ~~The proposed UST pit will be double-lined with visqueen to help prevent the migration of the offsite hydrocarbon product into the new pit.~~ The location of the proposed slurry wall, recovery well RW-1, and new UST pit are shown on Plate 2, Proposed Work Location Map and a Slurry Wall Schematic is shown on Plate 3.

If you should have any questions or comments about this Addendum to Work Plan, please call us at (408) 264-7723.

Sincerely,
RESNA Industries Inc.



Robert D. Campbell
Staff Geologist



Joel Coffman
Project Geologist

Enclosures: Plate 1, Site Vicinity Map
Plate 2, Proposed Slurry Wall, Well, and New Tank Pit Locations
Plate 3, Slurry Wall Schematic



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**ADDENDUM TWO TO WORK PLAN
TO CONSTRUCT AN INTERIM SLURRY WALL**

at

**ARCO Station 4494
566 Hegenberger Road
Oakland, California**

69038.13

**Prepared for
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402**

by

RESNA Industries Inc.

December 31, 1992



Working To Restore Nature

3315 Almaden Expressway, Suite 34
San Jose, CA 95118
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Fax: (408) 264-2345

December 31, 1992
1228MWHE
69038.13

Mr. Mike Whelan
ARCO Products Company
P.O. Box 5811
San Mateo, California 94402

Subject: Addendum Two to Work Plan to Construct an Interim Slurry Wall at ARCO Station 4494, 566 Hegenberger Road in Oakland, California.

Mr. Whelan:

As requested by ARCO Products Company (ARCO), this letter has been prepared by RESNA Industries Inc. (RESNA) to serve as an Addendum Two to Work Plan and Addendum One to Work Plan (RESNA, May 15, 1991), to construct a slurry wall in an attempt to help prevent further migration of the black hydrocarbon product apparently originating from offsite, near the former underground gasoline storage tank (UST) pit at the subject site. During removal of the USTs at the subject site, black hydrocarbon product was noted seeping from the storm drain backfill into the tank pit. The location of the site is shown on the Site Vicinity Map, Plate 1.

The proposed interim work includes excavating a 1-foot wide trench, two feet away from the exposed 6-foot diameter storm drain and three feet below groundwater (approximately 11 feet below ground surface). The trench will be excavated near the eastern site boundary and extend for approximately 25 feet to the west. Once the bottom of the trench has been completed, excavated soil from the former UST pit will be used as a concrete form with plywood supports, allowing a width of one foot and a height three feet below ground surface (top of the storm drain). A concrete slurry will then be poured into the form and allowed to set. The soil form surrounding the concrete will be removed and returned to the appropriate soilpile. The excavation between the storm drain and the slurry wall will be lined with two layers of visqueen followed by the installation of a 6-inch diameter recovery well (RW-1), and backfilled with pea gravel to approximately one foot above the well screen. A bentonite seal will be placed over the pea gravel which will underlie engineering

Addendum Two to Work Plan
ARCO Station 4494, Oakland, California

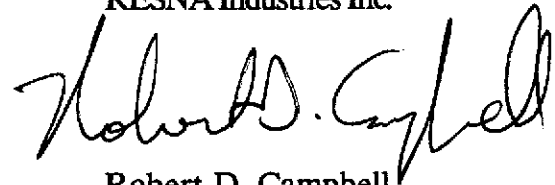
December 31, 1992
69038.13

fill to grade. A Horner EZY Floating Product Skimmer will be installed, and periodically inspected, in RW-1 to provide interim remediation. A monitoring well (MW-8) will be installed in the former UST backfill, on the opposite side of the slurry wall, to evaluate the groundwater between the slurry wall and the former UST pit.

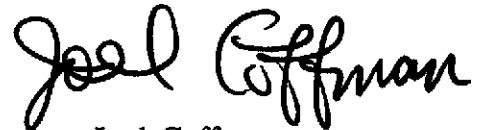
The proposed UST pit will be double-lined with visqueen to help prevent the migration of the offsite hydrocarbon product into the new pit. The location of the proposed slurry wall, recovery well RW-1, and new UST pit are shown on Plate 2, Proposed Work Location Map and a Slurry Wall Schematic is shown on Plate 3.

If you should have any questions or comments about this Addendum to Work Plan, please call us at (408) 264-7723.

Sincerely,
RESNA Industries Inc.



Robert D. Campbell
Staff Geologist



Joel Coffman
Project Geologist

Enclosures: Plate 1, Site Vicinity Map
Plate 2, Proposed Work Location Map
Plate 3, Slurry Wall Schematic

cc: Mr. Barney Chan, Alameda County Health Care Services Agency

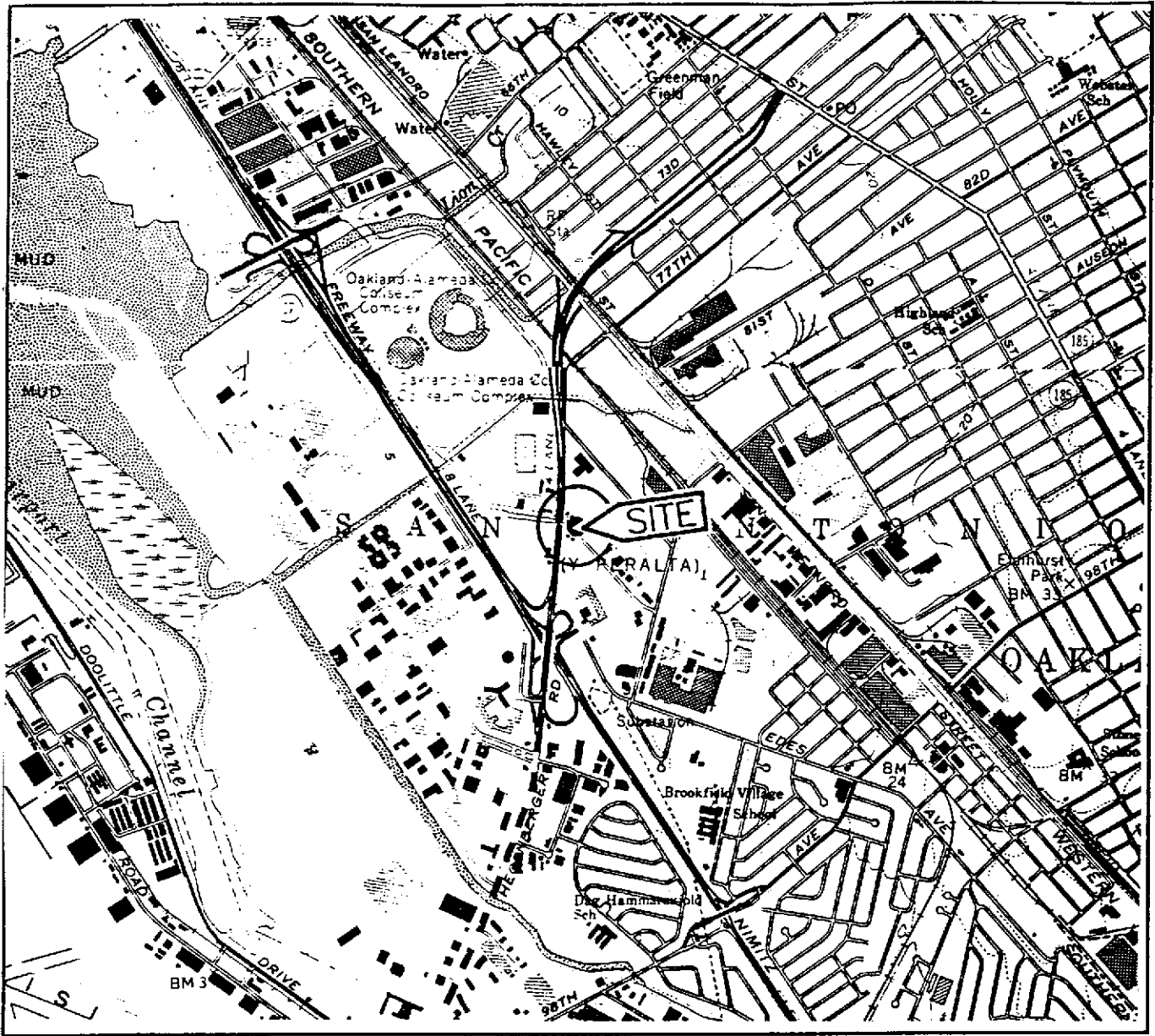
Addendum Two to Work Plan
ARCO Station 4494, Oakland, California

December 31, 1992
69038.13

REFERENCES

RESNA. May 15, 1991. Work Plan for Subsurface Investigations and Remediations at ARCO Station 4494, 566 Hegenberger Road in Oakland, California. RESNA Report 69038-6.

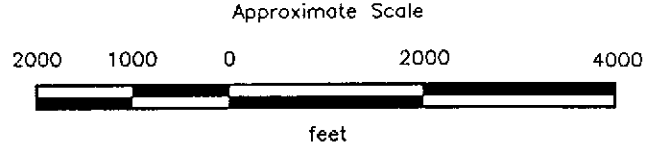
RESNA. May 15, 1991. Addendum One to Work Plan to Perform Underground Tank Replacement Investigation, Preliminary Offsite Investigation, and Interium Product Recovery at ARCO Station 4494, 566 Hegenberger Road in Oakland, California. RESNA Report 69038-6.



Base: U.S. Geological Survey
 7.5-Minute Quadrangles
 Oakland East/San Leandro, California.
 Photorevised 1980

LEGEND

● = Site Location



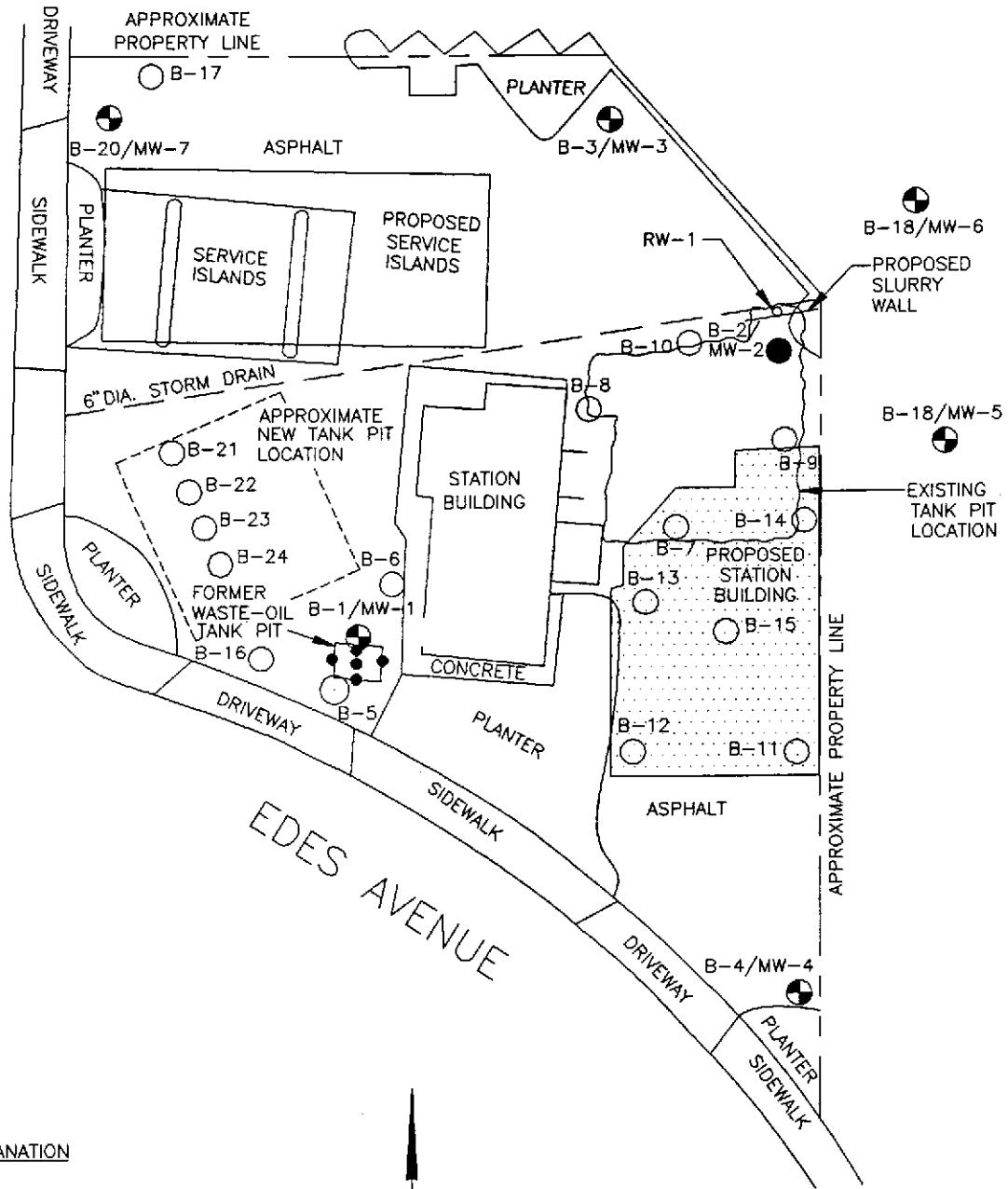
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SITE VICINITY MAP
 ARCO Service Station 4494
 566 Hegenberger Road
 Oakland, California

PLATE
 1

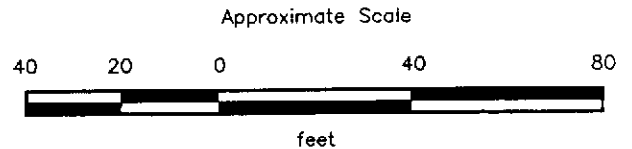
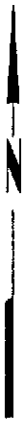
PROJECT 69038.13

HEGENBERGER ROAD



EXPLANATION

- = Waste-oil tank excavation soil sample (Pacific Environmental Group, January 1989)
- B-20/MW-7 ● = Monitoring wells (Applied GeoSystems, October 1989 and August 1990 and July 1992)
- B-10 ○ = Soil boring (Applied GeoSystems, August 1990, March 1991 and December 1992)
- = Abandoned well (December 1992)



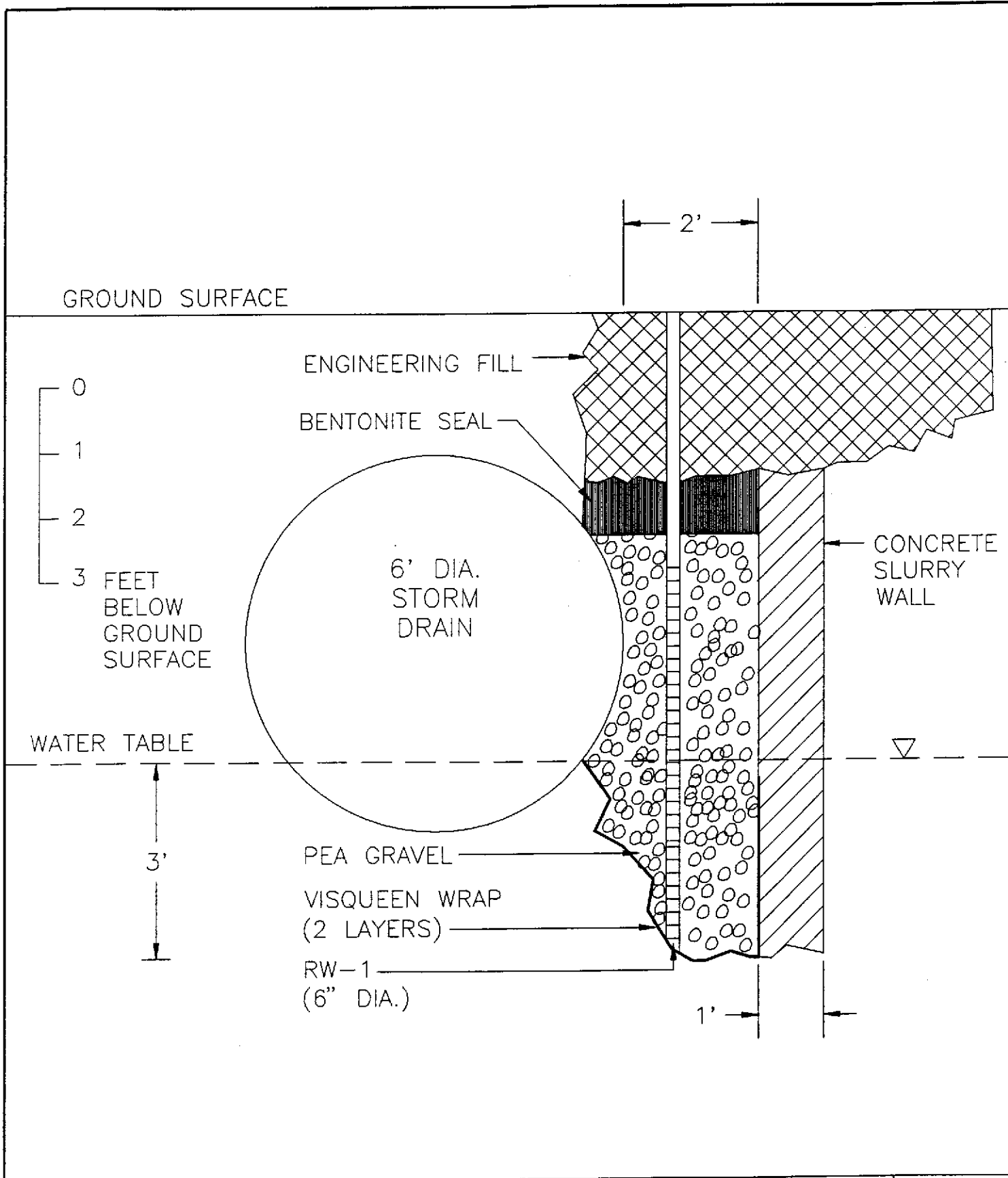
Source: Modified from plans supplied by ARCO Products Co. (dated August 12, 1982) and City of Oakland Dept. of Public Works (dated December 19, 1961).



PROPOSED WORK LOCATION MAP
ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE
2

PROJECT 69038.13



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SLURRY WALL SCHEMATIC
ARCO Service Station 4494
566 Hegenberger Road
Oakland, California

PLATE
3