

June 7, 1996



WACS 59293

Rinker

Florida Department of Environmental Regulation
Bureau of Waste Cleanup
2600 Blair Stone Road
Tallahassee, FL 32399-2400

Rinker Materials Corporation
1200 N.W. 137th Avenue
Miami, FL 33182

P.O. Box 650679
Miami, FL 33265-0679

Facsimile (305) 223-5403
Telephone (305) 221-7645

Att: Mr. Paul Weirzbicki
Waste Cleanup Supervisor
West Palm Beach, Florida

RECEIVED

JUN 7 1996

Dear Mr. Weirzbicki:

DEPT. OF ENV. PROTECTION
WEST PALM BEACH

Please find attached an original and four (4) copies of our "Notice Of Intent To Use the General Permit to Construct/Operate a Soil Thermal Treatment Facility" for your review.

In addition we are submitting with the "Notice" the following:

- I. Site Location Maps (USGS quad)
- II. Ground Water Monitoring Plan plus DER remarks
- III. Process Flow Diagrams
- IV. Comprehensive Quality Assurance Project Plan (ComQAPP)
Statement and approval alternate procedures
- V. Modification to operation for PCB soils, leachate collection and
drummed storage operation
- VI. Pre-treatment and Post-treatment Soils Storage Area Design
- VII. Soils Size Reduction Method

We would appreciate your approval of "Notice of Intent" at your earliest convenience. Please let us know if you have any questions concerning our submittal.

Sincerely,

Michael D. Vardeman
Cement Division Environmental Manager

MDV:lg



Rinker

Rinker Materials Corporation
1200 N.W. 137th Avenue
Miami, FL 33182

P.O. Box 650679
Miami, FL 33265-0679

Facsimile (305) 223-5403
Telephone (305) 221-7645

May 30, 1996

Mr. Carlos Rivero-De Aguilar
Manager
Florida Department of Environmental Production
P.O. Box 15425
West Palm Beach, FL 33416

RECEIVED

JUN 7 1996

DEPT OF ENV PROTECTION
WEST PALM BEACH

Re: Rinker Materials Corporation Thermal Treatment Facility General
Permit No: SO13-195017

Dear Mr. Carlos Rivero-DeAguilar:

Rinker's understanding was that this permit expired April 1997 based on the permit modification for PCB's, Leachete collection, etc. in 1992. Based on my call to Lee Martin and our conversation today I now understand the original expiration of April 1996 still applied. Enclosed is a renewal notice of intent to operate our facility and the required \$500 processing fee.

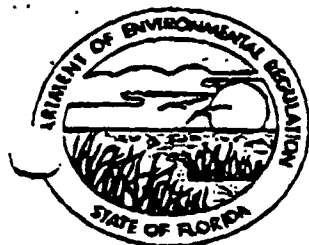
This is a renewal of the existing operation at this time. Rinker has and is operating within all of the existing permit conditions and will continue to do so.

Please excuse the misunderstanding of the actual permit expiration date and thank you for your assistance in correcting this error. Please advise me of any questions you may have at 305-229-2955.

Very Truly Yours:


Michael D. Vardeman
Cement Division Environmental Manager

EXHIBIT A



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

NOTICE OF INTENT TO USE THE GENERAL PERMIT TO CONSTRUCT/OPERATE A SOIL THERMAL TREATMENT FACILITY

JUN 7 1996

INSTRUCTIONS: Please provide all information as requested below. For stationary facilities submit the original and four copies of this notice of intent application along with site location map, process flow chart drawings of the treatment facility, and groundwater monitoring plan to the appropriate district office, and one copy of the groundwater monitoring plan to the Bureau of Waste Cleanup. For mobile units submit applicable information to the Bureau of Waste Cleanup, Florida Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Type: Stationary X Mobile General Permit No.: A013-195017

Name of Facility: Rinker Materials Corporation County: Dade

Facility Address: 1200 NW 137 Avenue, Miami, Florida 33182

Latitude 25° 46' 48" N Longitude 80° 25' 10" W

Telephone Number: 305-221-7645

Name of Owner(s): CSR Rinker

Owner(s) Address if different from above: P.O. Box 24635

West Palm Beach, Florida 33416

Department of Environmental Regulation Air Permit Number: A013-234126

Expiration Date: 9-17-98

Length of primary chamber (ft): 80 feet

Heat generation capability (BTU/hr): 40,000,000

Capacity of facility at a 25 minute retention time (yd³/hr): or (tons/hr): 40

Operating temperature of primary chamber (°F): 1000° Discharge

Estimated average volume of soil to be processed (yd³/mth): 5,000 to 29,000

Covered storage area (ft²): 30,000 Height of cover (ft): 45'

Floor construction (cement, asphalt, etc.): Cement

RECEIVED

JUN 7 1996

DEPT OF ENV PROTECTION
WEST PALM BEACH

Statement by Applicant:

I hereby attest as the owner or authorized representative of Rinker Materials Corporation (attach letter of authorization) the preceding information is accurate and that I will operate this facility in accordance with the requirements of Chapter 17-775 entitled "Soil Thermal Treatment Facilities." I understand that failure to operate this facility as required will constitute grounds for revocation of this permit.

James S. Jenkins III
Signature of Owner or Authorized Representative

James S. Jenkins III, VP Cement Operations
Name and Title

May 30, 1996
Date

Statement by Florida Registered Professional Engineer:

I hereby certify that the above information pertinent to the construction and operation of this facility is correct and that this facility is capable of operating to achieve the requirements and standards as set forth in Chapter 17-775 of the Florida Administrative Code.

[Signature]
Signature of Engineer
(affix seal)

Donald A. Beers
Engineer's Name (Please Type)

PE-0032530
Florida Registration Number

Rinker Materials Corporation
Company Name

P.O. Box 24635 West Palm Beach, FL 33416
Address Street City

5/30/96 (407) 833-5555
Date Telephone Number



Rinker

63-568
631

BARNETT BANK
CALHOUN AT JEFFERSON ST.
TALLAHASSEE, FL 32301

209707

P.O. BOX 24635
WEST PALM BEACH, FL 33416-4635
PHONE (407) 833-5555

DATE
05/30/96

CHECK NO.
00209707

NET AMOUNT
\$500.00*****

FIRST WITH
THE BEST 500dol's00cts

RECEIVED

JUN 7 1996

RINKER MATERIALS CORPORATION
TWO SIGNATURES REQUIRED IF OVER \$25,000.00

TO THE FLORIDA DEPARTMENT OF
ORDER ENVIRONMENTAL PROTECTION
OF P.O. BOX 15425
WESTPALM BEACH FL 33416

DEPT OF ENV PROTECTION
WEST PALM BEACH

Daniel Kelly

⑈ 209707⑈ ⑆063105683⑆

2000002688⑈



Rinker

PLEASE DETACH BEFORE DEPOSITING

VOUCHER NUMBER	INVOICE NUMBER	PURCHASE ORDER	INVOICE DATE	AMOUNT	DISCOUNT	NET AMOUNT
	218102		5/30/96	500.00		500.00
	PERMIT # S013-195017					



Florida Department of Environmental Protection

Lawton Chiles
Governor

Southeast District
P.O. Box 15425
West Palm Beach, Florida 33416

Virginia B. Wetherell
Secretary

NOV. 22 1993

CERTIFIED MAIL
RETURN RECEIPT REQUESTED RECEIVED

Mr. James S. Jenkins, III
Rinker Materials Corporation
P.O. Box 24635
West Palm Beach, FL 33416

JUN 7 1996
DEPT. OF ENV. PROTECTION
WEST PALM BEACH

GMS I.D. No.: 5013P03669
General Permit No.: SO13-195017
County: Dade
Project: Construct/Operate a Soil
Thermal Treatment Facility
Expiration Date: April 4, 1996

Dear Mr. Jenkins,

This letter acknowledges receipt of your notice of intent requesting modification to the General Permit referenced above. Based upon the representation submitted to the Department, the modifications appear compatible with the operation of the soil thermal treatment facility located at 1200 NW 137th Avenue, Miami, Dade County, FL 33182.

This facility shall be operated in accordance with the applicable paragraphs set forth in Florida Administrative Code Rule 17-775.

This General Permit is subject to the General Conditions of Florida Administrative Code Rule 17-4.510 through 17-4.540.

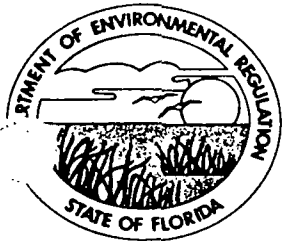
If you need further information, please contact Mr. Paul Wierzbicki at 407-433-2650, or 904-488-1320 (24 hours) in the event of an emergency.

Sincerely,

Vivek Kamath, P.E.
Waste Programs Administrator

cc: John Ruddell/BWC, Tallahassee
Tom Conrardy/BWC, Tallahassee
Zoe Kulakowski/BWC, Tallahassee
Isadore Goldman/Air Section, West Palm Beach
Mike Vardeman/Rinker, Miami
Bob Johns/DERM, Miami
Barbara Jones/Admin, West Palm Beach
WPB*DEP File #

Rinken



Florida Department of Environmental Regulation

Southeast District • 1900 S. Congress Ave., Suite A • West Palm Beach, Florida 33406

Lawton Chiles, Governor

RECEIVED Carol M. Browner, Secretary

APR 17 1991

RECEIVED APR 19 1991

CERTIFIED MAIL

RETURN RECEIPT REQUESTED

JUN 7 1996
DEPT OF ENV PROTECTION
WEST PALM BEACH

Mr. James S. Jenkins, III
Vice President, Cement Operations
Rinker Materials Corporation
Post Office Box 24635
West Palm Beach, FL 33416

GMS I.D. No.: 5013P03669
General Permit No.: S013-195017
County: Dade
Project: To Construct/Operate a Soil
Thermal Treatment facility
Expiration Date: April 4, 1996

Dear Mr. Jenkins:

This letter acknowledges receipt of your notice requesting the use of a General Permit. Based upon the representation submitted to the Department, this project appears to qualify for the operation of a soil thermal treatment facility located at 1200 Northwest 137th Avenue, Miami, Dade County, Florida 33182.

This facility shall be operated in accordance with the applicable paragraphs set forth in Florida Administrative Code Rules 17-775.

This General Permit is subject to the General Conditions of Florida Administrative Code Rules 17-4.510 through 17-4.540, F.A.C. (see backside).

If you need further information, please call Mr. Paul Wierzbicki, P.G., at telephone number 407/433-2650 or after hours 904/488-1320 for an emergency.

Sincerely,

J. Scott Benyon
Deputy Assistant Secretary

JSB:paw/28

cc: Mr. John Ruddell, Bureau of Waste Cleanup, DER, Tallahassee
Mr. Don Ehlenbeck, P.E., Bureau of Waste Cleanup, DER, Tallahassee
Mr. Chris McGuire, Esq., Office of General Counsel, DER, Tallahassee
Ms. Zoe Kulakowski, P.G., Bureau of Waste Cleanup, DER, Tallahassee
Mr. William E. Voshell, Rinker Materials Corporation
Mr. I. Goldman, P.E., Air Section, DER, West Palm Beach
Mara Austin, Metro-Dade Environmental Resources Management
West Palm Beach DER files

17-4.540 General Conditions for All General Permits.

(1) The terms, conditions, requirements, limitations, and restrictions set forth in this Part are "general permit conditions" and are binding upon the permittee. The conditions are enforceable under Chapter 403, F.S.

(2) The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit. The permittee is placed on notice that violation of the permit may result in suspension or revocation of the permittee's use of the general permit and may cause the Department to begin legal proceedings.

(3) The general permit does not convey any vested rights or any exclusive privileges. It does not authorize any injury to public or private property nor any invasion of personal rights. It does not authorize any infringement of federal, state or local laws or regulations. It does not eliminate the necessity for obtaining any other federal, state or local permits that may be required, or allow the permittee to violate any more stringent standards established by federal or local law.

(4) The general permit does not relieve the permittee from liability and penalties when the construction or operation of the permitted activity causes harm or injury to human health or welfare; causes harm or injury to animal, plant or aquatic life; or causes harm or injury to property. It does not allow the permittee to cause pollution in contravention of Florida Statutes and Department rules.

(5) The general permit conveys no title to land or water, nor does it constitute State recognition or acknowledgement of title. It does not constitute authority for reclamation of submerged lands. Only the Board of Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

(6) No general permit shall authorize the use of state owned land without the prior consent of the Board of Trustees of the Internal Improvement Trust Fund pursuant to Section 253.77, F.S.

(7) The general permit may be modified, suspended or revoked in accordance with Chapter 120, Florida Statutes, if the Secretary determines that there has been a violation of any of the terms or conditions of the permit, there has been a violation of state water quality standards or state air quality standards, or the permittee has submitted false, incomplete or inaccurate data or information.

(8) The general permit shall not be transferred to a third party except pursuant to Fla. Admin. Code Rule 17-4.120.

(9) The general permit authorizes construction and where applicable operation of the permitted facility.

(10) The permittee agrees in using the general permit to make every reasonable effort to conduct the specific activity or construction authorized by the general permit in a manner that will minimize any adverse effects on adjacent property or on public use of the adjacent property, where applicable, and on the environment, including fish, wildlife, natural resources of the area, water quality or air quality.

(11) The permittee agrees in using the general permit to allow a duly authorized representative of the Department access to the permitted facility or activity at reasonable times to inspect and test upon presentation of credentials or other documents as may be required by law to determine compliance with the permit and the Department rules.

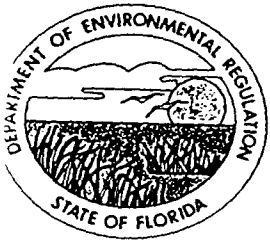
(12) The permittee agrees to maintain any permitted facility, or activity in good condition and in accordance with the plans submitted to the department under Rule 17-4.530(1).

(13) A permittee's use of a general permit is limited to five years. However, the permittee may request continued use of the general permit by notifying the Department pursuant to Rule 17-4.530(1). However, the permittee shall give notice of continued use of a general permit thirty days before it expires.

Specific Authority: 403.814(1), F.S.

Law Implemented: 253.123, 253.124, 403.061, 403.087, 403.088, 403.702-403.73, 403.814, 403.851-403.864, F.S.

History: New 7-8-82. Amended 8-31-88. Previously numbered as 17-5.54.



Florida Department of Environmental Regulation

Southeast District • 1900 S. Congress Ave., Suite A • West Palm Beach, Florida 33406
Lawton Chiles, Governor

Telephone: 407/433-2650
Fax: 407/433-2666

Carol M. Browner, Secretary

JAN. 05 1993

RECEIVED

JUN 7 1995

DEPT OF ENV. PROTECTION
WEST PALM BEACH

Mr. James Jenkins
Rinker Materials Corporation
P.O. Box 24635
West Palm Beach, FL 33416-4635

RE: Modification of General Permit No. SO13-195017
Rinker Materials Corp.
1200 NW 137th Ave
Miami, FL 33182

Dear Mr. Jenkins,

The Department has received the request to modify the Groundwater Monitoring Plan (GMP) for your facility, dated November 13, 1992, submitted by Handex, and the results from monitoring four previous quarters. The request to delete monitor wells 11, 12, 13, and 14 from the sampling schedule and retain monitor well 11 for quarterly groundwater elevation measurements is approved. Please note if abandonment of monitor wells 12, 13, and 14 is anticipated this must be accomplished using FDER and SFWMD guidelines.

If you have any questions please contact Paul Wierzbicki at 407-433-2650.

Sincerely,

Vivek Kamath

Vivek Kamath, P.E.
Waste Programs Administrator

cc: DER/BWC, Tallahassee
DERM, Miami; R.
West Palm Beach

SENDER: Complete items 1 and 2 when additional services are desired, and complete items 3 and 4. Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.	
1. <input type="checkbox"/> Show to whom delivered, date, and addressee's address. (Extra charge)	2. <input type="checkbox"/> Restricted Delivery (Extra charge)
3. Article Addressed to: <i>Mr. James Jenkins Rinker Materials Corp. P.O. Box 24635 West Palm Beach, FL 33416-4635</i>	4. Article Number <i>P 253 330 170</i>
Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise	
Always obtain signature of addressee or agent and <u>DATE DELIVERED</u> .	
5. Signature - Addressee <i>X</i>	8. Addressee's Address (ONLY if registered and fee paid)
6. Signature - Agent <i>X [Signature]</i>	
7. Date of Delivery	



Rinker Materials

April 4, 1991

Rinker Materials Corporation
1200 N.W. 137th Avenue
Miami, FL 33182

P.O. Box 650679
Miami, FL 33265-0679

Facsimile (305) 223-5403
Telephone (305) 221-7645

Florida Department of Environmental Regulation
Bureau of Waste Cleanup
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED

JUN 7 1996

DEPT. OF ENV. PROTECTION
WEST PALM BEACH

Att: Mr. Paul Wierzbicki
Waste Cleanup Supervisor
West Palm Beach, Florida

Dear Mr. Weirzbicki:

Please find attached an original and four (4) copies of our "Notice Of Intent To Use the General Permit to Construct/Operate a Soil Thermal Treatment Facility" for your review.

In addition we are submitting with the "Notice" the following:

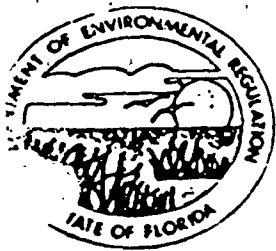
- I. Site Location Maps (USGS quad)
- II. Ground Water Monitoring Plan plus DER remarks
- III. Process Flow Diagrams
- IV. Comprehensive Quality Assurance Project Plan (ComQAPP)
Statement
- V. Pretreatment and Post-Treatment Soils Storage Area Design
- VI. Soils Size Reduction Method

We would appreciate your approval of "Notice of Intent" at your earliest convenience. Please let us know if you have any questions concerning our submittal.

Sincerely,

James S. Jenkins III
Vice President Cement Operations

JSJ:lg



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachmann, Secretary

John Shearer, Assistant Secretary

NOTICE OF INTENT TO USE THE GENERAL PERMIT TO CONSTRUCT/OPERATE A SOIL THERMAL TREATMENT FACILITY

CLN 7 1996
DEPT OF ENV PROTECTION
WEST PALM BEACH

INSTRUCTIONS: Please provide all information as requested below. For stationary facilities submit the original and four copies of this notice of intent application along with site location map, process flow chart drawings of the treatment facility, and groundwater monitoring plan to the appropriate district office, and one copy of the groundwater monitoring plan to the Bureau of Waste Cleanup. For mobile units submit applicable information to the Bureau of Waste Cleanup, Florida Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Type: Stationary X Mobile General Permit No.:

Name of Facility: Rinker Materials Corporation County: Dade

Facility Address: 1200 NW 137 Avenue Miami, FL 33182

Latitude 25 ° 46 ' 48 "N Longitude 80 ° 25 ' 10 "W

Telephone Number: 305-221-7645

Name of Owner(s): Rinker Materials Corporation

Owner(s) Address if different from above: P.O. BOX 24635

West Palm Beach, FL 33416

Department of Environmental Regulation Air Permit Number: A013-172954

Expiration Date: January 15, 1995

Length of primary chamber (ft): two at 475 feet each

Heat generation capability (BTU/hr): 160,000,000 (per kiln)

Capacity of facility at a 210 minute retention time
(yd³/hr): --- or (tons/hr): 56 (Feed)

Operating temperature of primary chamber (°F): +2750°

Estimated average volume of soil to be processed (yd³/mth): 5000

Covered storage area (ft²): 30,000 Height of cover (ft): 40

Floor construction (cement, asphalt, etc.): Cement coated with epoxy

RECEIVED

JUN 7 1996

DEPT OF ENV PROTECTION
WEST PALM BEACH

Statement by Applicant:

I hereby attest as the owner or authorized representative of
Rinker Materials Corporation (attach letter of
authorization) the preceding information is accurate and that I
will operate this facility in accordance with the requirements of
Chapter 17-775 entitled "Soil Thermal Treatment Facilities." I
understand that failure to operate this facility as required will
constitute grounds for revocation of this permit.



Signature of Owner or Authorized Representative

James S. Jenkins III, VP Cement Operations
Name and Title

March 1, 1991
Date

Statement by Florida Registered Professional Engineer:

I hereby certify that the above information pertinent to the
construction an operation of this facility is correct and that
this facility is capable of operating to achieve the requirements
and standards as set forth in Chapter 17-775 of the Florida
Administrative Code.


Signature of Engineer
(affix seal)

Donald A. Beers
Engineer's Name (Please Type)

PE-0032530
Florida Registration Number

Rinker Materials Corporation
Company Name

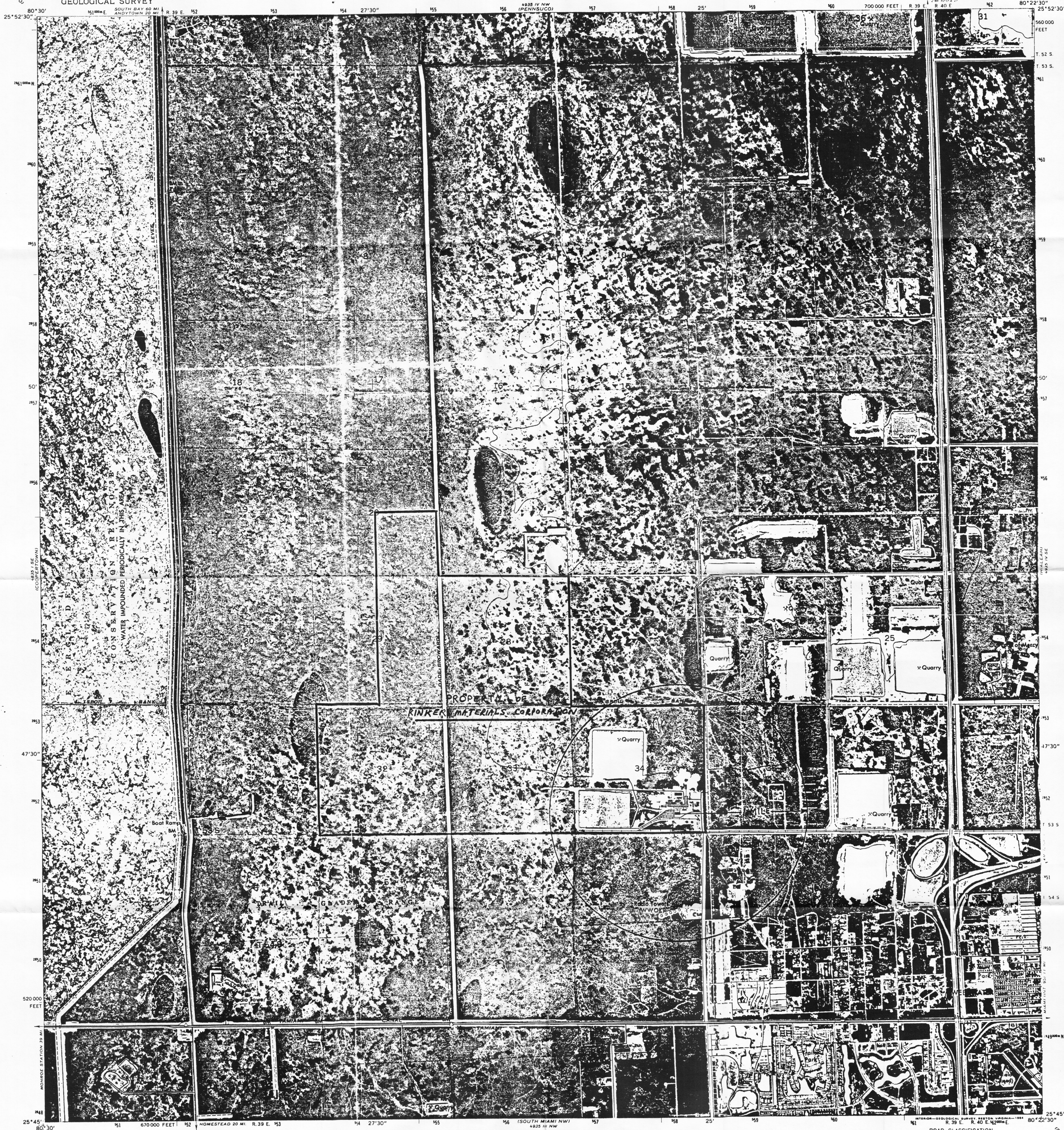
PO BOX 24635 West Palm Beach, FL 33416
Address Street City

3/5/91 (407) 833-5555
Date Telephone Number

I. SITE LOCATION MAPS (USGS QUAD)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

HIALEAH SW QUADRANGLE
FLORIDA-DADE CO.
7.5 MINUTE SERIES ORTHOPHOTOMAP (TOPOGRAPHIC)



Mapped, edited, and published by the Geological Survey
Control by USGS and NOS/NOAA

Orthophotomaps by photogrammetric methods from aerial photograph
taken February 7, 1980. Field checked 1973

Projection and 10,000-foot grid ticks: Florida coordinate
system, east zone (transverse Mercator)
1000-meter Universal Transverse Mercator grid ticks,
zone 17, shown in blue
1927 North American Datum
To place on the predicted North American Datum 1983
move the projection lines 40 meters south and
22 meters west as shown by dashed corner ticks

Certain land lines are omitted because of insufficient data
There may be private inholdings within the boundaries of

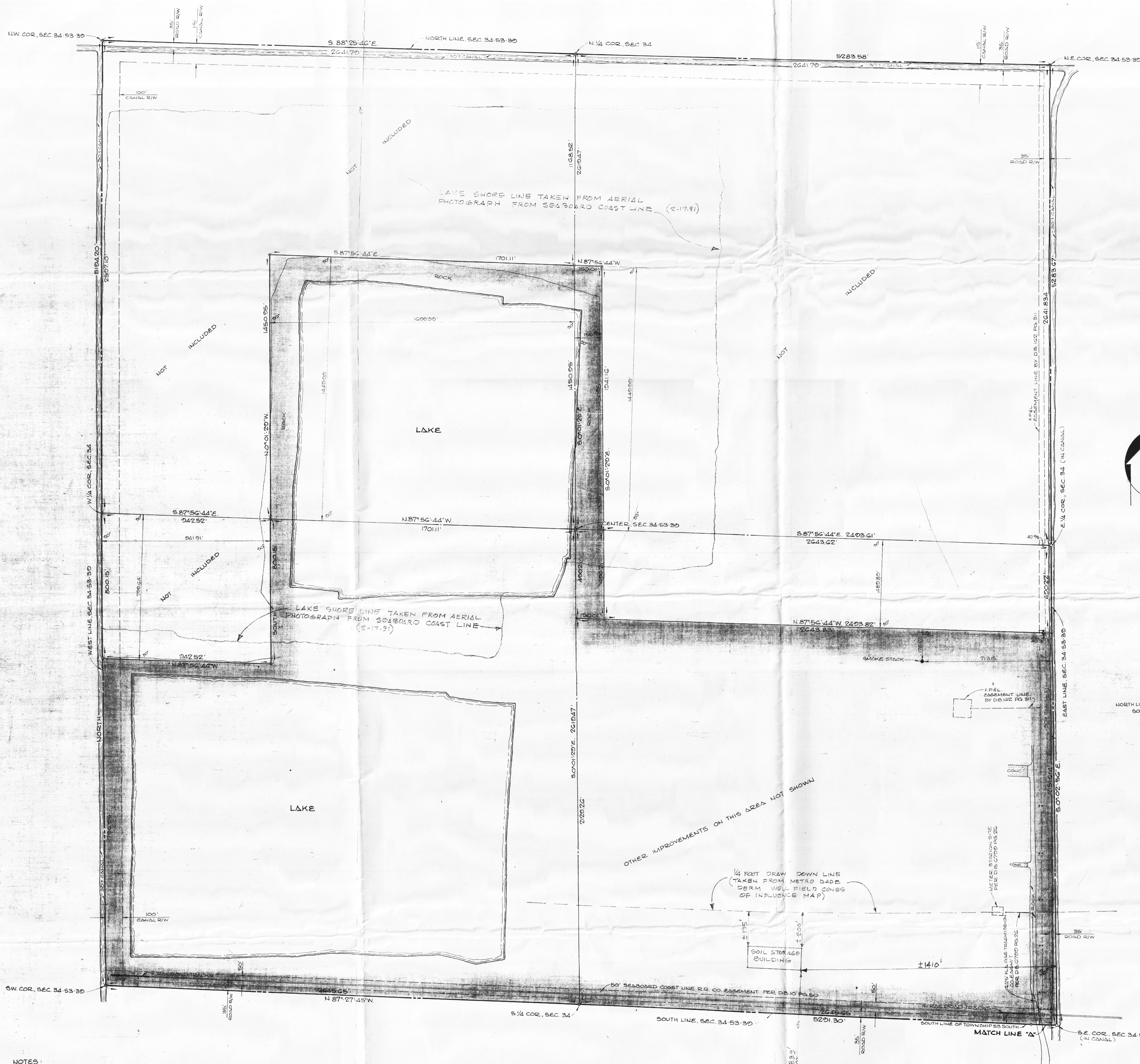
UTM GRID AND 1984 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET
Revisions shown in purple compiled in cooperation
with State of Florida agencies from aerial photographs
taken February 1980 and other sources

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION
Primary highway, hard surface ——— Light-duty road, hard or improved surface ———
Secondary highway, hard surface ——— Unimproved road ———
Trails ———
() Interstate Route () U. S. Route () State Route

HIALEAH SW, FLA.
25080 G-4 UM 024

1973



NOTES:
BEARINGS SHOWN HEREON ARE BASED ON AN ASSUMED MERIDIAN.
PERIMETER ROAD R/W'S AND CANAL R/W'S WERE TAKEN FROM
LEHIGH PORTLAND CEMENT CO. DRAWING M-1000-12.

LEGEND:
• DENOTES PIPE IN CONCRETE.
• DENOTES POWER POLE.
• DENOTES STREET LIGHT.

PLAN
SHOWING PROPERTY OF
LEHIGH PORTLAND CEMENT CO.
LOCATED NEAR
MIAMI, DADE COUNTY, FLORIDA
SCALE: 1" = 200' DATE: MAY 3, 1976
DEPARTMENT OF PROPERTIES ALLENTOWN, PENNA.

(SEE DETAIL & TAMIAMI TRAIL
& RIGHT THIS SHEET)

CERTIFIED TO LEHIGH PORTLAND CEMENT CO. AND RINKER PORTLAND CEMENT CORP.
WE HEREBY CERTIFY That the attached plan of the above described property is true and correct to the
best of our knowledge and belief as recently surveyed and plotted under our direction.
SCHWEBKE - SHISKIN & ASSOCIATES, INC.
By: *Richard P. Shiskin* President
Prof. Land Surveyor 120576 State of Florida.

prepared by
SCHWEBKE - SHISKIN & ASSOCIATES, INC.
LAND SURVEYORS - ENGINEERS - ARCHITECTS - LAND PLANNERS
MIAMI
ORDER NO. 124480 F.B. 1752 PG. 31 MAY 8, 1976

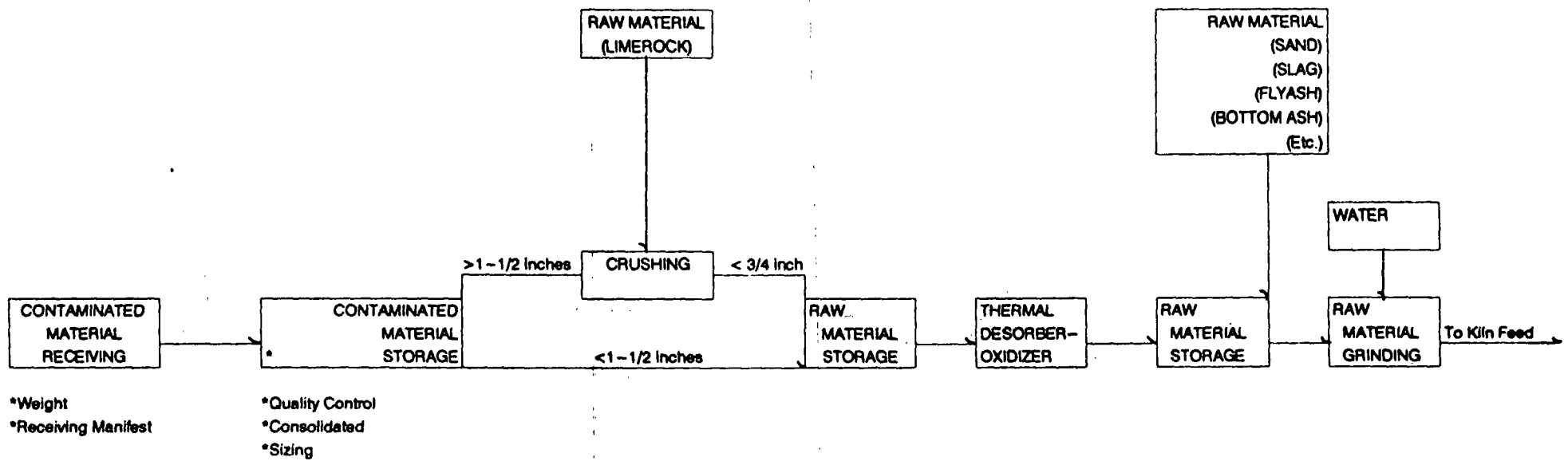
RECEIVED
JUN 7 1976
DEPT. OF ENV. PROTECTION
WEST PALM BEACH
REV: MAY 13, 1991
D-534

III. PROCESS FLOW DIAGRAM

RECEIVED
JUN 7 1996
DEPT OF ENV PROTECTION
WEST PALM BEACH

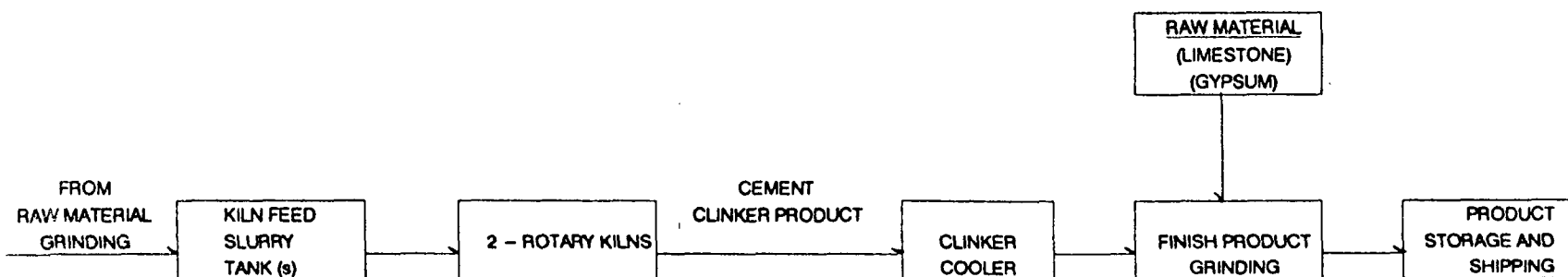
PROCESS FLOW DIAGRAM

PAGE 1



PROCESS FLOW DIAGRAM

PAGE 2



*Product Exit Temp - ± 2800 F

*Product Retention - 3 hr min.

*Physical & Chemical Transition

RECEIVED
JUN 7 1996
DEPT OF ENV PROTECTION
WEST PALM BEACH

II. GROUND WATER MONITORING PLAN

GROUNDWATER MONITORING PLAN

**Rinker Portland Cement Corp.
1200 N.W. 137 Avenue
Miami, Florida**

RECEIVED
JUN 7 1996
DEPT OF ENV PROTECTION
WEST PALM BEACH

January 1991

**prepared for:
Rinker Materials Corp.
P.O. Box 24635
West Palm Beach, Florida**

**prepared by:
Groundwater Specialists, Inc.
3003 South Congress Ave., Suite 1C
Palm Springs, FL 33461**

GROUNDWATER MONITORING PLAN

RINKER PORTLAND CEMENT CORP.
1200 N.W. 137th Avenue, Miami, Florida

INTRODUCTION

The Rinker Portland Cement Corp. operates a Portland Cement manufacturing facility in North-Central Dade County. Because of the materials handled at the facility, various environmental regulations and guidelines require that groundwater monitoring be undertaken. Rinker Portland Cement Corp. authorized Groundwater Specialists, Inc. to prepare this Groundwater Monitoring Plan, in order to meet four separate regulatory requirements and guidelines, including: (1) those outlined in Chapter 17-775, FAC (pending); (2) those outlined in Chapter 17-762, FAC (pending); (3) those resulting from the recent designation of Rinker's wastewater treatment facility to "IW-2" status; and (4) those related to the Dade County Northwest Wellfield Protection Plan. The most prominent concern of this groundwater monitoring plan is the protection of groundwater quality at Dade County's Northwest Wellfield.

FACILITIES DESCRIPTION

The location of the Rinker Portland Cement Corp. facility is shown on Exhibit 1. A site plan is shown as Exhibit 2. The features most pertinent to this Groundwater Monitoring Plan are listed (1-4) below. These features lie outside the Northwest Wellfield Protection Area (see Exhibit 2).

- (1) A proposed soils storage area (SW corner). This area will be used to store contaminated soils before thermal treatment in the kilns; it will be covered with a roof.
- (2) A 600,000-gallon aboveground tank provides storage for contaminated wastewater (SE corner). This tank lies within a diked area; its contents are piped above ground to the kilns.
- (3) A 600,000-gallon aboveground used oil tank (SE corner). This tank lies within a diked area; it stores oil before it is piped to the kilns.
- (4) Six 25,000-gallon aboveground oil/water separation tanks (SE corner), two of which are proposed. These tanks supplement used oil and contaminated water storage; they lie within the same diked area as the larger used-oil tank.

Other on-site facilities lie partially or entirely within the Northwest Wellfield Protection Area, as that area was most recently calculated. These include: an eight-inch underground oil pipeline linking the aboveground tanks to the kilns; a four-inch aboveground wastewater pipeline linking the 600,000-gallon aboveground tank, and two 20,000-gallon wastewater tanks to the kilns; four isolated diesel or oil tanks; and a pressure cleaning facility. Of these facilities, only the underground oil pipeline warrants consideration for groundwater monitoring. The other aboveground features, including the isolated diesel or oil tanks, are situated on concrete slabs or under a roof; these are visually accessible for inspection. The pressure cleaning facility is beneath a roof and based on two separated concrete slabs; it includes a monitor well that taps the space between the two separated concrete slabs.

There are four existing wells used to provide water to the plant and two existing monitor wells on site. These are shown on Exhibit 2. Of the water-supply wells, two supply process water. These are fitted with surface pumps and tap the Biscayne Aquifer at total depths less than 20 feet; each is continuously pumped at 1.08 MGD (million gallons per day). A separate potable water well provides water for plant personnel, and another separate well supplies water for fire protection. These latter wells also tap the uppermost parts of the Biscayne Aquifer. When compared to the water pumped from the process-supply wells, the potable well and the fire-protection well withdrawals are negligible.

A well at the pressure cleaning facility monitors water derived from cleaning should it penetrate the uppermost of two concrete slabs. The slabs are separated by about eight feet; the lowermost lies at a depth of about nine feet. The monitor well is sampled monthly for visual inspection. The pressure cleaning water is recirculated in an enclosed system with no discharge.

The second existing monitor well is owned and maintained by the Florida Department of Health and Rehabilitative Services. It is sampled monthly for bacteriological and turbidity analyses.

HYDROGEOLOGIC SETTING

The Rinker facility lies 2.7 miles nearly due south of the nearest well in the Northwest Wellfield as shown on Exhibit 1. The wellfield is theorized to cause a northward groundwater flow direction in the region of the Rinker facility. Many of the monitor wells proposed in this document address this fact by their locations on the northern side, downgradient of major Rinker facilities. The groundwater flow direction(s) on the Rinker property, however, could differ significantly from the regional flow direction because of pumping from Rinker's two production

wells. These wells pump 1.08 MGD each to support the cement manufacturing process. The installation and testing of the wells proposed herein will determine whether on-site groundwater pumping controls the on-site groundwater gradient as opposed to groundwater pumping from the Northwest Wellfield. Because the major intent of this monitoring plan is to protect the Northwest Wellfield from potential discharges from Rinker facilities, it is most prudent to monitor groundwater between Rinker's facilities and the Northwest Wellfield. Therefore, this plan refers to the north as the "downgradient" direction.

By far the most prolific aquifer in the subject area is the Biscayne Aquifer. It is tapped by both the Northwest Wellfield and Rinker's wells. The top of the Biscayne Aquifer lies at a depth of about eight feet in the subject area; its bottom lies at about 55 feet below grade. The Biscayne is practically equal in its vertical extent to the Fort Thompson Formation. This formation is riddled with solution cavities that lend a very high permeability to the Biscayne Aquifer.

The uppermost six feet of sediments, that lie above the Biscayne Aquifer, are hydrogeologically more complex. Dense limestone, approximately three feet thick, directly overlies the Biscayne; it has very low permeability and prevents or severely impedes the percolation of rainfall into the Biscayne except where breached by quarries or similar manmade features. Above this dense limestone unit is the Miami Limestone (Oolite); it supports a thin, perched water table. A thin layer of muck and marl lies above the Miami Limestone and together with the Miami Limestone, forms the uppermost hydrogeologic unit. The near-surface hydrogeologic relationships are shown in a cross-section on Exhibit 3. [The hydrogeologic scenario described above is from an unpublished report prepared for Rinker by Dames & Moore (December, 1987). That report describes on-site hydrogeologic testing with the purpose of determining the direction of groundwater flow beneath Rinker's property; its conclusions were theoretical, as they were based on groundwater modeling of flow in the Biscayne Aquifer. The pertinent parts of the report are included in Attachment A.]

The uniformity of the more generalized subsurface is shown by cross-sections in Exhibit 4. The Biscayne Aquifer coincides with the strata marked "Qf". Those formations from ground surface to about eight feet in depth coincide with formations marked "Q1" and "Qm". The locations of the Rinker plant and the southernmost well in the Northwest Wellfield are indicated on the cross sections. It is worthy of mention that the dense limestone cited above and shown on Exhibit 3 (approximately between depths of 4.5 and 8 feet), does not appear on the cross sections; this is due to the generalized nature of the cross-sections on Exhibit 4.

PROPOSED MONITOR-WELL DESCRIPTIONS AND SUPPLEMENTAL INFORMATION ON REQUIREMENTS AND GUIDELINES

The following text summarizes each of the four requirements and guidelines for groundwater monitoring and identifies proposed well locations and the rationale for those locations.

Requirements as per Chapter 17-775, FAC

Chapter 17-775, FAC, is entitled "Soil Thermal Treatment Facilities". As drafted, this rule requires groundwater monitoring at unspecified locations to ensure maintenance of groundwater quality potentially affected by the storage of contaminated soils. This rule pertains directly to a proposed under-roof soil storage facility shown on Exhibit 2. As discussed below, four monitor wells are planned at locations around this building/soils storage area.

Chapter 17-775.610(2) outlines the required contents of a groundwater monitoring plan. The requirements are listed below, followed with information intended to meet the requirements.

Requirement (a): Specify locations of the proposed unaffected natural background and downgradient monitoring wells and construction details of the monitoring wells:

A total of ten monitor wells are proposed as indicated on Exhibit 5. Wells 1 through 8 are "shallow" wells that tap the perched water table above the dense limestone cited above. These shallow wells would be the first to signal groundwater degradation because they are adjacent to the facilities of greatest concern and because they tap the uppermost water-bearing zone. Wells 9 and 10 are "deep" wells that tap the upper part of the Biscayne Aquifer. Construction diagrams for the shallow and deep monitor wells are shown on Exhibits 6 and 7, respectively.

As discussed above, the downgradient direction, or direction of groundwater flow, is north. The unaffected natural background wells are Wells 1, 4, 6, and 7; these lie upgradient of the soil storage area and the diked tanks area. The downgradient wells are 2, 3, 5, 8, 9, and 10. Wells 2, 3, 5, and 8 lie downgradient from the soil storage area and the diked tanks area. Wells 9 and 10 are downgradient of the entire Rinker facility and tap the zone that would indicate any potential off-site escape of degraded groundwater in the Biscayne Aquifer.

Requirement (b): Specify hydrogeological, physical and chemical data for the site, including:

(1). The direction and rate of the groundwater flow. The direction of groundwater flow in the Biscayne Aquifer is presently

concluded to be north, toward the Northwest Wellfield. The southernmost portion of the cone-of-depression of that wellfield was most recently modeled to lie on the Rinker property, as shown on Exhibit 5.

The rate of groundwater flow in the Biscayne Aquifer is concluded to be approximately 25 feet per day. This flow rate is based on Dade County's "Wellfield Cones of Influence" map that shows travel-time lines of 210 and 100 days around the Northwest Wellfield. Between these lines the flow rate was calculated to be 32 feet per day; this rate was extrapolated southward to the 210 day line to arrive at 25 feet/day.

The direction of groundwater flow in the uppermost water-bearing zone varies locally on site. This zone is thin and has a relatively low permeability; it is not affected significantly by water levels in the underlying Biscayne Aquifer. Groundwater in this shallow zone flows predominantly toward the nearest lateral escape. Such escapes may be quarries, canals or pumping wells. The locations of the aforementioned array of shallow monitor wells address the nonuniform direction of flow in this zone.

The groundwater flow rate in the uppermost zone is judged to vary considerably depending on the specific on-site location. Assuming a hydraulic conductivity of 300 gpd/sq ft in this zone, an average gradient of 0.001, and an effective porosity of 0.20, the average flow rate would be 0.2 feet per day.

(2). Specify background groundwater quality. Aside from the routine bacteriologic and turbidity analyses of samples from one monitor well (cited above), there are no known groundwater quality data available at the Rinker site. Such data will be reported following monitor-well installations and the first round of sampling and analyses.

(3). Specify porosity, horizontal and vertical permeability for the aquifers, and the depth to, and lithology of the first confining bed. The Biscayne Aquifer has vertical and horizontal permeabilities in the many thousands (gpd/sq ft). Likewise, the porosity can be exceptionally high. Because of these conditions, an on-site determination of these factors as they relate to groundwater monitoring is not practical, nor is the information that could be gained likely to be useful. It is certain that degraded groundwater will move at a very high rate and readily disperse horizontally and vertically.

The uppermost "aquifer", or water-bearing zone, is estimated to have an average horizontal hydraulic conductivity of about 300 gpd/sq ft, a vertical hydraulic conductivity of about 100 gpd/sq ft, and a porosity of 0.20. These estimates are based solely on the types of materials in this zone - muck, marl and probably sand-filled oolitic limestone.

The top of the first confining bed, a dense limestone, lies approximately between depths of 4.5 and 8 feet below ground.

(4). Specify vertical permeability, thickness and extent of any confining beds. The vertical hydraulic conductivity of the first confining bed is reported to be about 13 gpd/sq ft. (from the Dames & Moore report, Attachment A). Its thickness ranges between about 2 and 5.5 feet. The extent of this bed is large, it is widely found in the region of the site.

(5). Specify topography, soil information, and surface water drainage systems surrounding the site. Exhibit 1 shows the topography of the site; it is essentially flat except as affected by ponds, quarries and canals. Ground surface elevation is near five feet above sea level and varies generally about 0.5 feet, more or less than five feet.

According to the only available soil survey (Soil Conservation Service, 1947, Soil Survey Series 1947, No. 4, a description of Dade County soils), the soil beneath Rinker's facility is referred to as "Everglades Peat, shallow phase over shallow marl". It is reported to have a peat mantle less than 36 inches thick, separated from the underlying limestone by a thin layer of marl that ranges in thickness from a few inches to 24 inches. It is reported to have medium to slow drainage. This soil type is common to the entire Rinker facility as shown on Exhibit 2. The ponds and quarries in the vicinity of the site receive drainage directly by surface runoff and through the sediments above the dense limestone (Exhibits 1 and 2).

Depending on the relative height of groundwater levels and water levels in adjacent surface-water bodies at any given time, water could seep from sediments to canals and quarries or in the reverse direction. The canals in the vicinity of the site are for land drainage; they are not connected directly to ponds or quarries. Rinker maintains no structures on the nearby canals.

(6). Specify inventory depth, construction details (well drillings logs), and cones of depression of water supply wells located within a one mile radius of the site. Within a one-mile radius of Rinker's facility, there are at least fourteen properties that have or may have wells. Records of the South Florida Water Management District and Dade County DERM were checked to locate and gather data on such wells. In addition, a survey to document private wells was conducted; each property within one mile was visited and where possible, inquiries were made.

Records made available at the agencies were few. The well survey, likewise, produced relatively few facts. The data gathered from these efforts are summarized in Attachment B. Wells that were located tap the Biscayne Aquifer and they pump low volumes of

groundwater. There were no wells located within a one-mile radius of the Rinker facility to the north.

In the context of the extremely high transmissivity of the Biscayne Aquifer, the few, low-volume pumping centers have cones of depression that are insignificant. Such cones of depression might be calculated but it is not likely that they could be physically measured. It is possible that pumping-well drawdowns could be measured; they would certainly be minor (< 0.01 foot). Because: (1) private wells would not change even local groundwater contours, (2) the Northwest Wellfield is presently understood to be the dominant influence on the groundwater flow direction, and (3) there are no private wells located within one mile north (downgradient) of the Rinker facility, there is no apparent justification for gathering more information on neighboring wells than is provided in Attachment B.

Requirements as per Chapter 17-762, FAC.

Chapter 17-762, FAC is entitled "Stationary Aboveground Storage Tank Systems". As drafted, this rule requires groundwater monitoring before December 31, 1993, relative to Rinker's operation of an underground oil line. The location of this line is shown on Exhibit 5. Rinker has prepared plans to abandon the subject pipeline and replace it with an aboveground fuel line before the cited rule becomes effective. Because the existing underground fuel line will be abandoned before December 31, 1993, groundwater monitoring specific to this pipeline is not contemplated. However, the proposed monitor wells that tap the top of the Biscayne Aquifer lie downgradient of the pipeline as well as other related features. These are Wells 9 and 10 as shown on Exhibit 5.

Requirements as per "IW-2" status.

The requirement for groundwater monitoring resulting from the recent change in status from "IW-5" to "IW-2" is not specific. Wastewater is pumped to and stored in the aboveground wastewater tank; this tank lies within the diked area. From this storage tank, wastewater is pumped through an aboveground pipeline to the kilns via a smaller aboveground tank (kiln water tank). Groundwater monitoring of the wastewater system will be provided by Wells 5, 6, 7, 8, 9, and 10; these wells are discussed above.

Requirements as per the Northwest Wellfield Protection Plan.

The requirement for groundwater monitoring for water-quality protection of Dade County's Northwest Wellfield also is not specific. The above mentioned monitor wells (Wells 1 through 10) are intended to provide water-quality protection with respect to Dade County's Northwestern Wellfield.

MONITOR WELL SAMPLING FREQUENCY AND ANALYSES

Monitor well sampling and analyses will be performed according to regulations and rationale discussed herein. A summary of sampling frequencies and analyses is shown on Exhibit 8.

Wells 1 through 4 will be sampled quarterly as specified in Chapter 17-775, as these wells surround the only such facility (soil storage area) addressed in this rule.

Wells 5 through 8 also will be sampled quarterly; analyses will include volatile organic aromatics, polynuclear aromatic hydrocarbons, coliform bacteria and metals. Coliform bacteria analyses are included because these wells surround a wastewater tank. Metals are included because these wells surround the used-oil tanks.

Wells 9 and 10 will be sampled quarterly for the parameters required as per Chapter 17-775, minus coliform bacteria and metals; coliform bacteria and metals will be sampled/analyzed annually.

Any release of petroleum products or wastewater should be detected first in the shallow Wells 1 through 8. A relatively high (quarterly) frequency for sampling/analysis is therefore proposed. In the event that a release is not detected by the shallow wells or a detected release migrates to the underlying Biscayne Aquifer, such a release should be detected by deep Wells 9 and 10. Because of the high priority of protecting the Biscayne Aquifer, and because the groundwater flow rate in the Biscayne is so high (25 ft/day), Wells 9 and 10 also will be sampled with a high frequency (quarterly) for the most mobile parameters. Coliform bacteria and metals will be sampled/analyzed in the deep Wells 9 and 10 at a low frequency (annually) because they are relatively immobile and any source concentrations would likely be quite low.

CLOSING

The subject Rinker facility lies in rural Dade County above one of the most prolific aquifers known, the Biscayne Aquifer. Fortunately, the facility is separated from the Biscayne by natural materials (dense limestone) having a low permeability. This physical situation provides a buffer, or partial barrier to any release, offering protection to the Biscayne Aquifer. This groundwater monitoring plan provides for two levels of groundwater protection. Monitoring of groundwater above the dense limestone will provide the earliest possible signal should an otherwise undetected release occur. Monitoring of groundwater in the Biscayne Aquifer on the northern side (downgradient) of the facility will provide a signal should a release affect the water-supply aquifer. On the basis of the plan proposed, the letter and intent of the requirements and guidelines are believed to be satisfied.

SUMMARY

The Rinker Portland Cement Corp. is required to implement a groundwater monitoring plan at its facility on N.W. 137th Avenue, Miami, Florida. The facility contains aboveground wastewater and oil tanks and an underground oil pipeline. Groundwater occurs in a shallow zone above a low-permeability layer, beneath which occurs a very high permeability aquifer that yields water to a municipal wellfield north of the Rinker facility. Eight monitor wells that tap the shallow zone are proposed; these are located at the corners of an under-roof contaminated soils storage area and at the approximate corners of a diked area containing aboveground wastewater and oil tanks. Two monitor wells that tap the water-supply aquifer (the Biscayne Aquifer) are proposed; these are located on the northern or downgradient side of the Rinker facility. The proposed monitor-well sampling includes quarterly sampling for all wells, with groundwater analyses appropriate to the locations of the wells and facilities. Analyses will be made for petroleum-related compounds, metals, and coliform bacteria.

Respectfully submitted
GROUNDWATER SPECIALISTS, INC.

 5.29.91

Paul G. Jakob
Florida P.G. 245

EXHIBITS

GSI

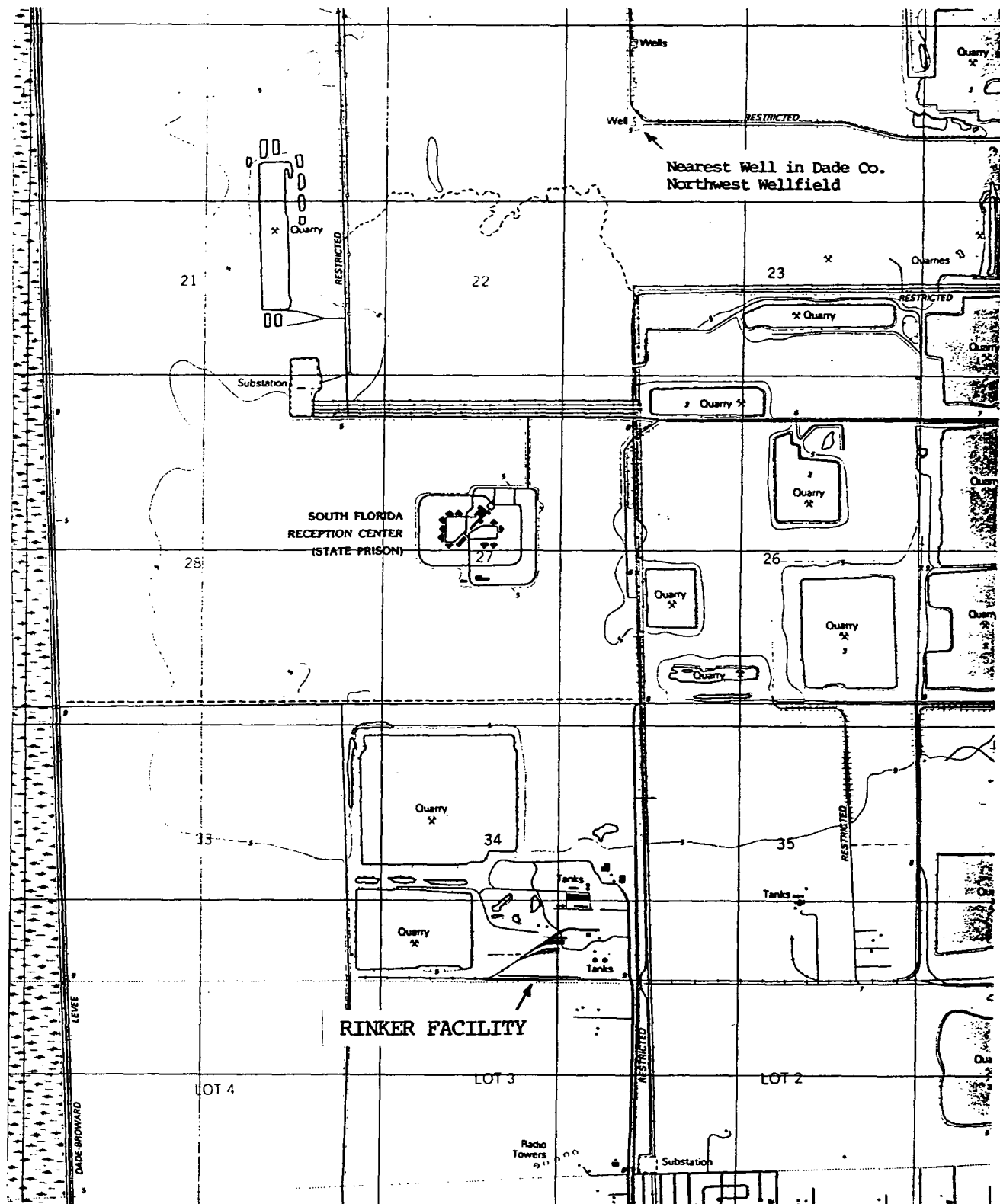
DATE:
NOV.
1990

FOR:
RINKER PORTLAND
CEMENT CORP.

SUBJECT:
SITE LOCATION

EXHIBIT:
1

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA



CSI

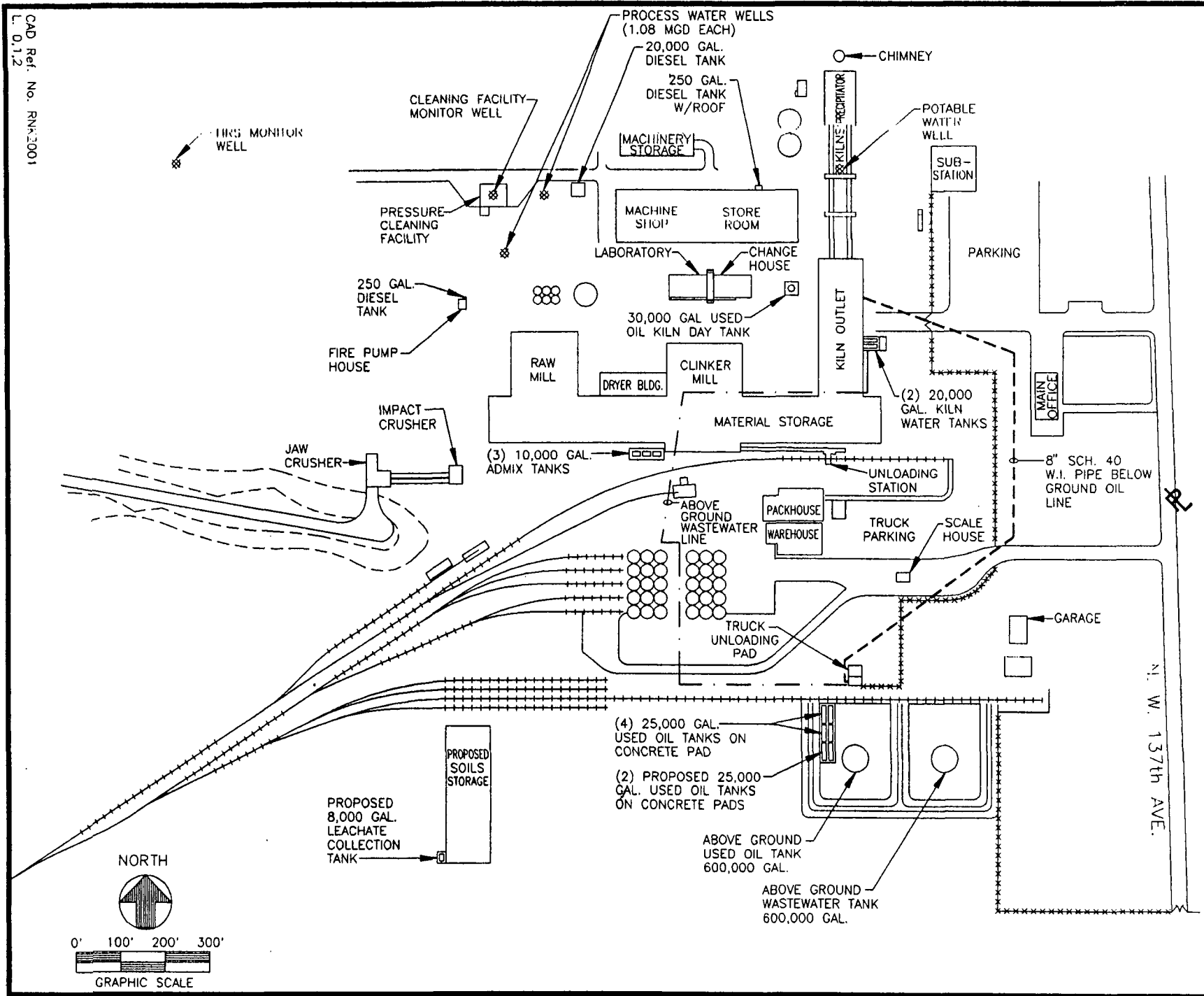
DATE:
NOV.
1990

FOR:
**RINKER PORTLAND
CEMENT CORP.**

SUBJECT:
SITE PLAN

EXHIBIT:
2

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA



CAD Ref. No. RN-2001
L. 0.1.2

GSI

DATE:
NOV.
1990FOR:
RINKER PORTLAND
CEMENT CORP.

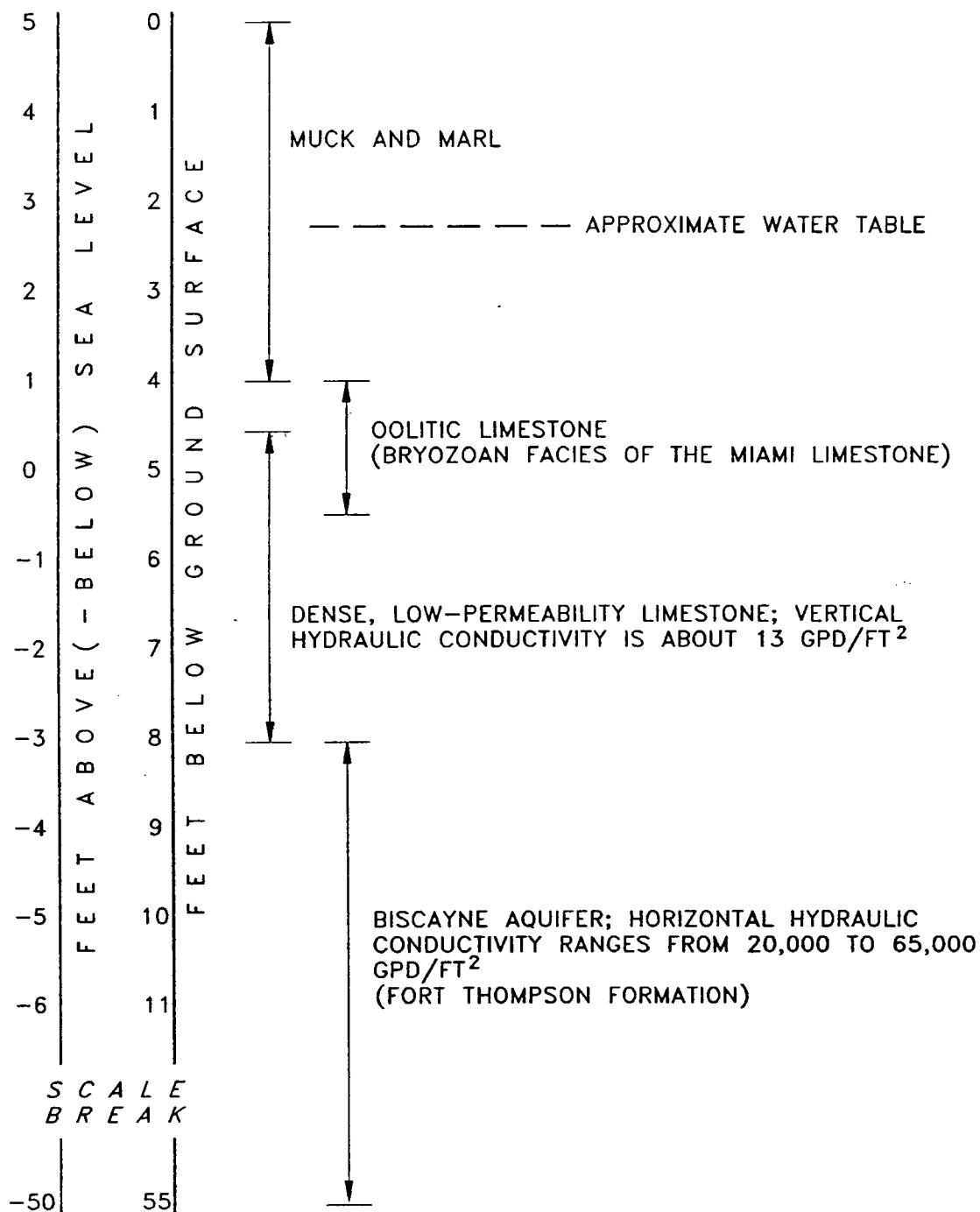
SUBJECT:

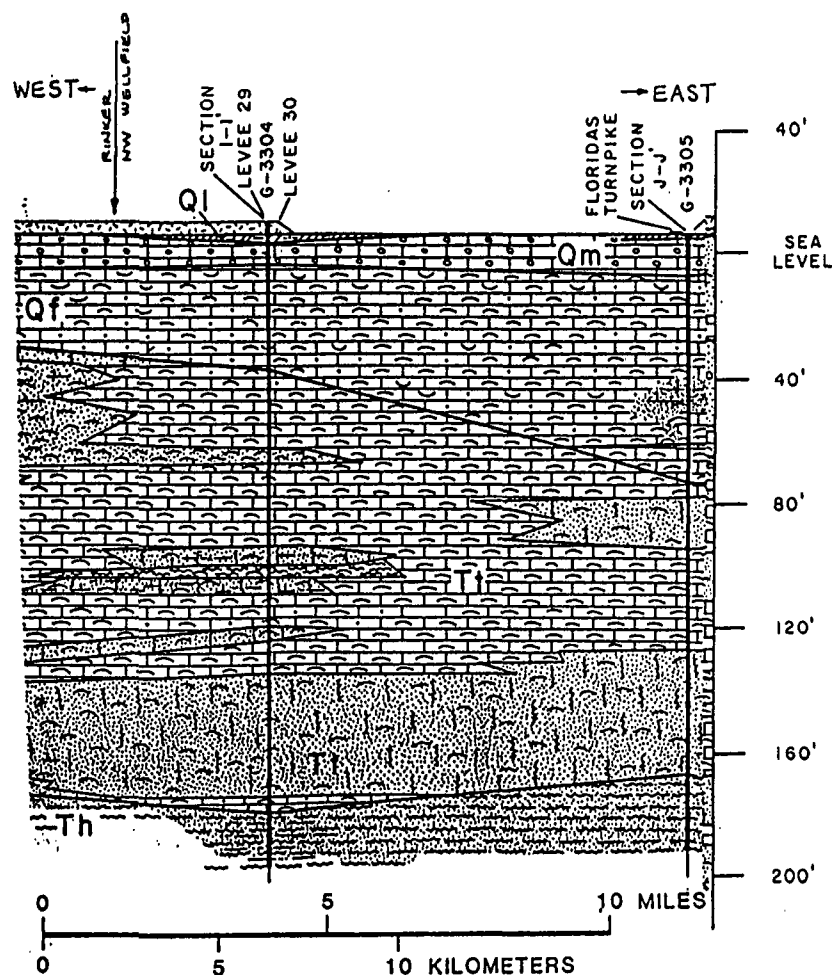
LOCAL HYDROGEOLOGIC PROFILE

EXHIBIT:

3

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA





Vertical Scale Greatly Exaggerated

EXPLANATION

	Fill		Freshwater shells
	Peat or muck		Silt
	Sand		Clay
	Sandstone		Claystone or siltstone
	Detrital carbonate sand		Micrite, lime mud
	Rock fragments		Limestone
	Concretions		Oolitic limestone
	Marine shells		Coralline limestone, biolithite

GEOLOGIC FORMATIONS

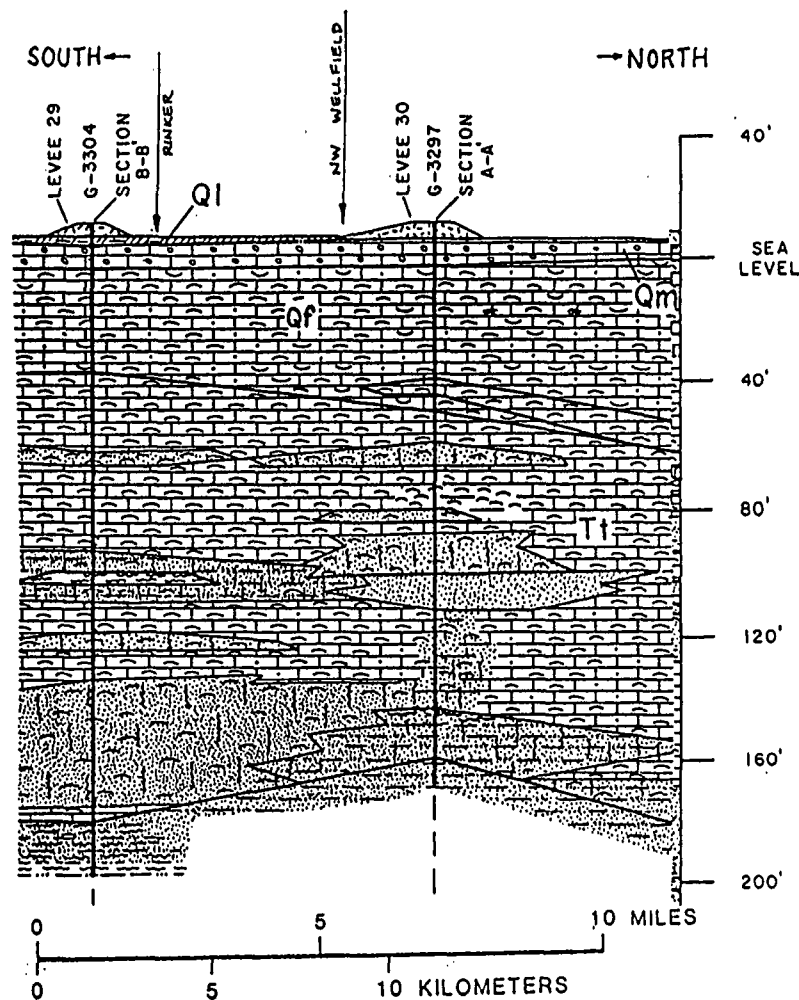
Ql	Lake Flirt Marl
Qp	Pamlico Sand
Qm	Miami Oolite
Qa	Anastasia Formation
Qk	Key Largo Limestone
Qf	Fort Thompson Formation
Tt	Tamiami Formation
Th	Hawthorn Formation
Tth	Tamiami Formation and Hawthorn Formation undifferentiated

Formation boundary

Test well and number

GSI	DATE:	FOR:	SUBJECT:
	NOV. 1990	RINKER PORTLAND CEMENT CORP.	
LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA		REGIONAL HYDROGEOLOGIC PROFILE, E to W	
		EXHIBIT: 4.1	

from: Geology of the Surficial Aquifer System,
Dade Co., 1987, USGS WRI Report 864126,
by Carmen R. Causaras.



EXPLANATION

	Fill		Freshwater shells
	Peat or muck		Silt
	Sand		Clay
	Sandstone		Claystone or siltstone
	Detrital carbonate sand		Micrite, lime mud
	Rock fragments		Limestone
	Concretions		Oolitic limestone
	Marine shells		Coralline limestone, biolithite

GEOLOGIC FORMATIONS

Ql	Lake Flirt Marl
Qp	Pamlico Sand
Qm	Miami Oolite
Qa	Anastasia Formation
Ok	Key Largo Limestone
Qf	Fort Thompson Formation
Tt	Tamiami Formation
Th	Hawthorn Formation
Tth	Tamiami Formation and Hawthorn Formation undifferentiated

	Formation boundary
	Test well and number

from: Geology of the Surficial Aquifer System,
Dade Co., 1987, USGS WRI Report 864126,
by Carmen R. Causaras.

CSI

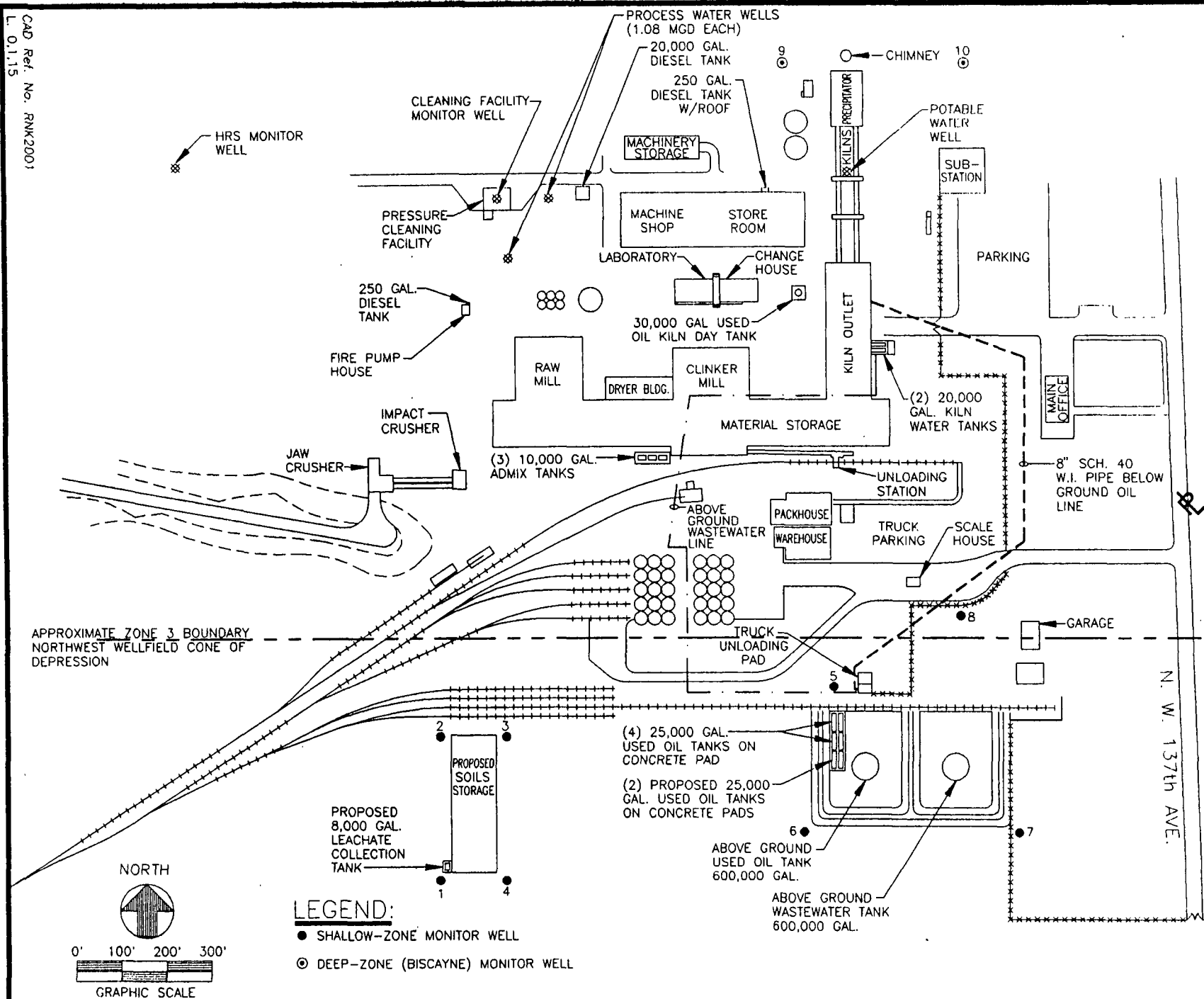
DATE:
NOV.
1990

FOR:
RINKER PORTLAND
CEMENT CORP.

SUBJECT:
MONITOR WELL LOCATIONS

EXHIBIT:
5

LOCATION: 120C N.W. 137th AVE., MIAMI, FLORIDA

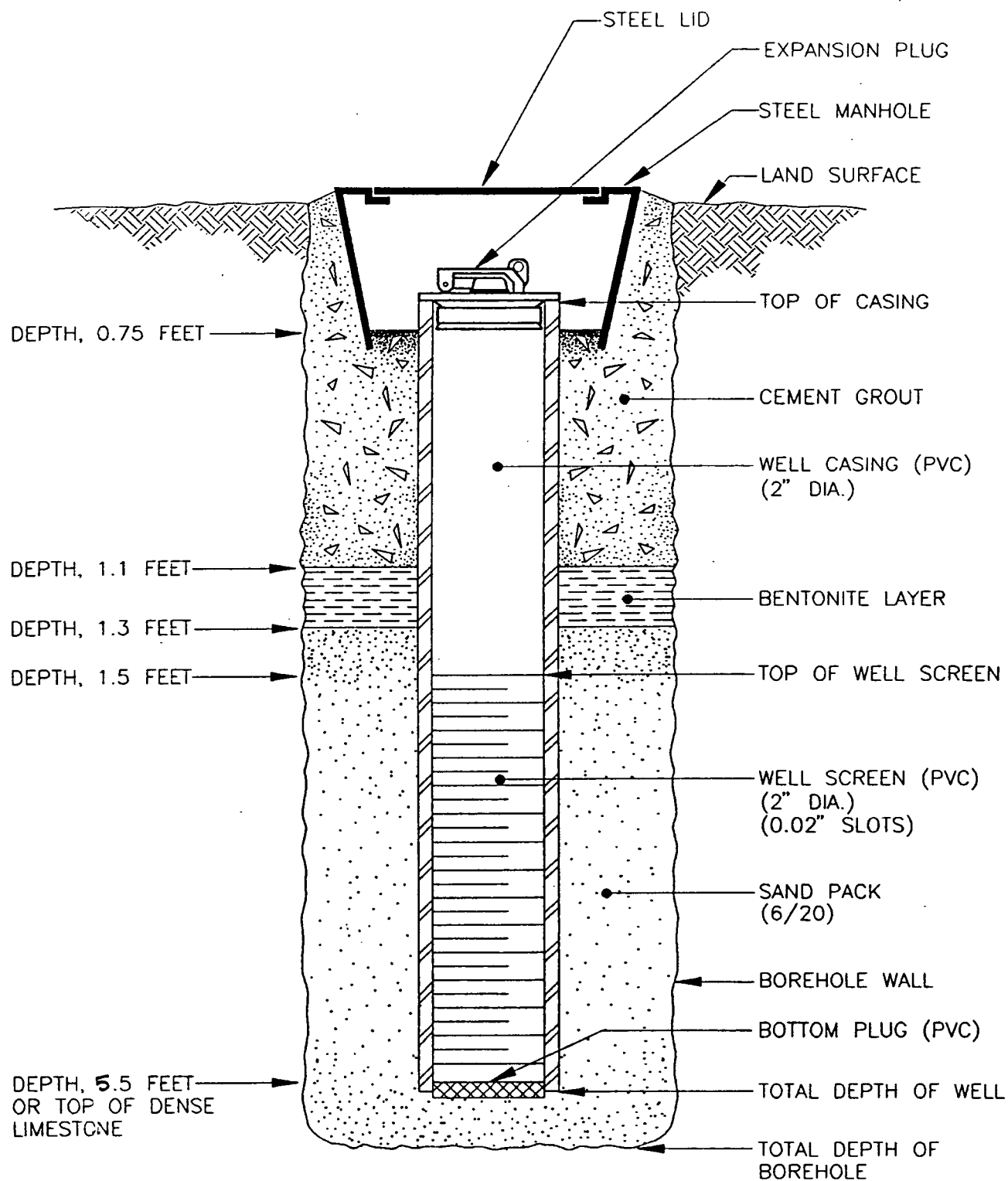


CAD Ref. No. RINK2001
L. 0.1,15

GSI

DATE:
11/90FOR:
RINKER PORTLAND
CEMENT CORP.SUBJECT:
SHALLOW-ZONE MONITOR WELLS
1 THROUGH 8EXHIBIT:
6

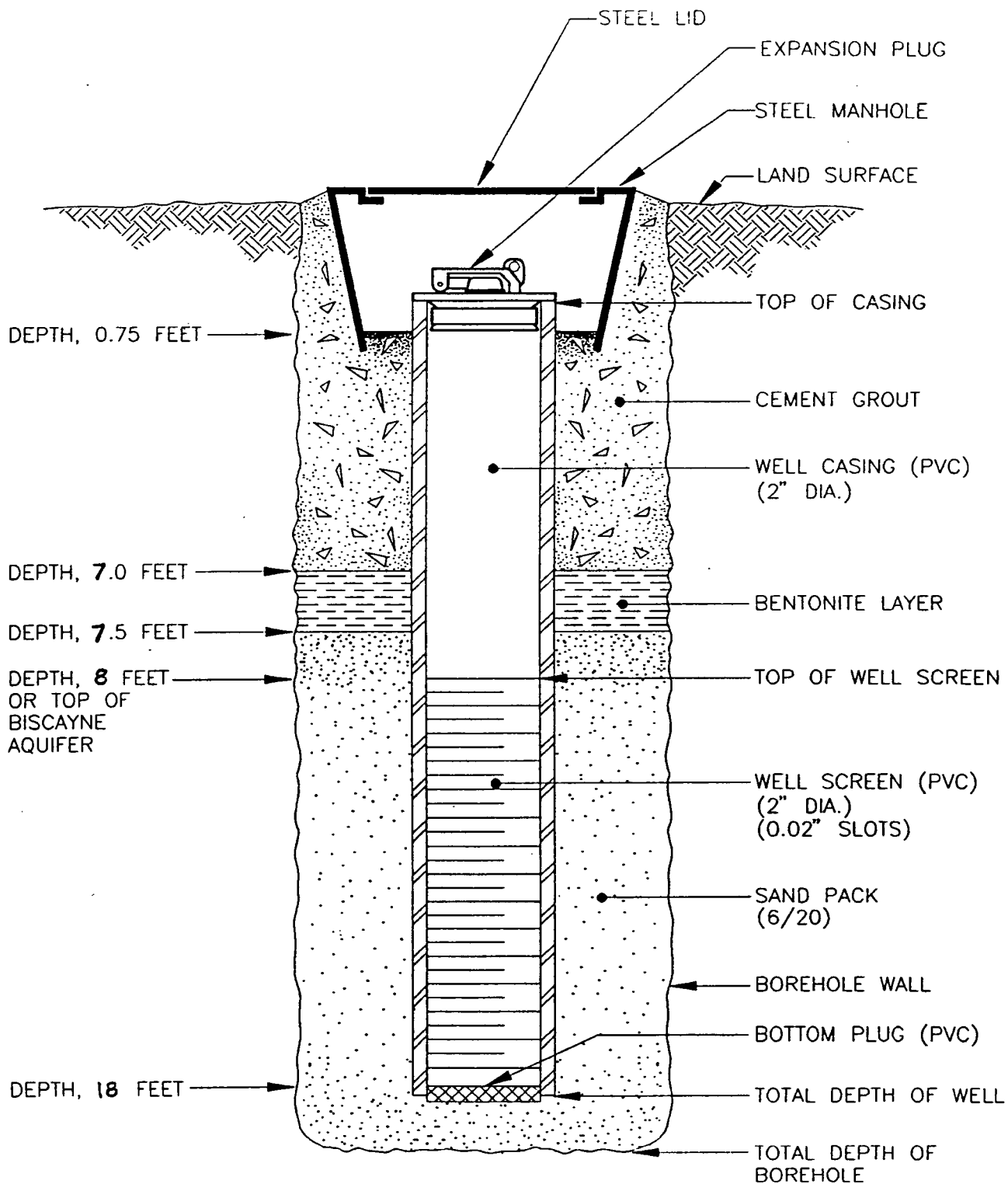
LOCATION:



DRAWING NOT TO SCALE

CAD Ref. = RNK2001A
L. 0,1,2
Plotting Scale: 1 = 1

LOCATION:



DRAWING NOT TO SCALE

CAD Ref. = RNK2001A
L. 0,1,3
Plotting Scale: 1 = 1

EXHIBIT 8

Monitor Well Sampling Frequency and Analyses

	Well Numbers									
	1	2	3	4	5	6	7	8	9	10
Volatile organic aromatics	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Polynuclear aromatic hydrocarbons	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
Metals	Q	Q	Q	Q	Q	Q	Q	Q	A	A
Coliform bacteria					Q	Q	Q	Q	A	A

- Notes:**
- (1) Volatile organic aromatics will be analyzed by EPA Method 602, including MTBE.
 - (2) Polynuclear aromatic hydrocarbons will be analyzed by EPA Method 610.
 - (3) Metals will include: Arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver. Analytical methods will be selected from those specified in Chapter 17-775, FAC.
 - (4) "Q" signifies quarterly; "A" signifies annually.

ATTACHMENT A



DAMES & MOORE

A PROFESSIONAL LIMITED PARTNERSHIP

350 WEST CAMINO GARDENS BLVD., BOCA RATON, FLORIDA 33432 (305) 392-9070

December 9, 1987

Rinker Materials Corporation
1501 Belvedere Road
West Palm Beach, FL 33406

Attention: Mr. William Voshell
Environmental Specialist

Report
Hydrogeologic Study
Northwest Dade County Facility
Miami, Florida
For Rinker Materials Corporation

Dear Mr. Voshell:

1.0 INTRODUCTION

Dames & Moore was retained by Rinker Materials Corporation to perform a hydrologic evaluation to evaluate the aquifer's performance, and the radius of influence of the Rinker Material production wells. The Rinker Material Corporation facility is located at 1200 N.W. 137th Avenue, in Miami, Florida.

2.0 REGIONAL GEOLOGY

The area of investigation is comprised of several distinct layers. On the surface, much of the area is covered by mucks and marls extending as far east as Conservation Area No. 3 and diminishing toward the east. This muck/marl combination is present from the ground surface (+5 feet above MSL) to +1 foot above MSL.

Below the organic cover is a one to two foot thick layer of Miami limestone which is composed of the Miami Oolite/Bryozoan facies. This facies plays an important role in the recharge of canals within the area of the Conservation area located to the west.



Rinker Materials Corporation

December 9, 1987

Page 2

Acting as a hydrologic barrier beneath the Oolite/Bryozoan facies is a group of very hard, dense limestone layers. This limestone is present from 0.5 feet above MSL to 3 feet below MSL. In contrast to the highly permeable layer below (the Biscayne Aquifer) these layers appear impermeable; vertical flows of water through them are orders of magnitude less than the horizontal flow through the Biscayne Aquifer. In this respect, they act as an aquitard, restricting surface water recharge into the underlying Biscayne Aquifer. The Biscayne Aquifer is present from 3 feet MSL to 50 feet below MSL.

3.0 REGIONAL HYDROGEOLOGY

Dade County is partially situated on the Atlantic Coastal Ridge, which runs roughly parallel to the coast and diminishes in the south central Everglades in the eastern portion of the County. West of the ridge, the Oolitic Facies gradually taper out and yield to the underlying Bryozoan Facies. It is these facies which carry the ponded waters from the western conservation areas to the canals in the east. Below the Miami Limestone (Oolitic/Bryozoan Facies) are the dense "impermeable" limestones. Geologic information from test wells and shallow borings indicate these dense limestones are widespread. Additional information obtained in connection with canal excavations, indicate that the harder layers of dense limestone occur throughout most of western and southern Dade County, and that they occur at about the same altitude (Klein and Sherwood 1961). Similar layers were present in wells to the south, therefore it is reasonable to assume that the relatively impermeable zone underlies much of the area and their confining characteristics are widespread.

Recharge to the Biscayne aquifer through the dense limestone happens on a localized scale, the overall continuity and the blanketing effect at these layers in general tend to retard infiltration. In Dade County, the aquifer thickens toward the east (i.e., coastal ridge) and contains much more sand. The thin dense limestones either thin and disappear or they occur deeper in the aquifer near the coast (Klein and Sherwood 1961).

The regional aquifer system is continuous and hydrologically sound. Tests made in the area of Levee 30 indicate aquifer transmissibility of 3,600,000 gallons per day, and a vertical permeability of 1.95×10^{-5} ft/sec (6.0×10^{-4} cm/sec). Historical records show that permeabilities within the Biscayne Aquifer vary greatly. Permeability values have been reported by Prugh that vary from 0.03 ft/sec (0.91 cm/sec) to 0.10 ft/sec (3.05 cm/sec) for various formations within the Biscayne Aquifer;



Rinker Materials Corporation

December 9, 1987

Page 3

others have reported up to 1.31 ft/sec (40 cm/sec) (Shea, 1955) at other sites in the central and southern parts of the state. Schmertmann suggests a reasonable permeability of 0.02 ft/sec (0.61 cm/sec).

4.0 SUBSURFACE CONDITIONS

Field exploratory pits were dug at three points. Two pits were in line with each other and the remaining one was perpendicular to the other two exploratory pits. The axis of each pit intercepted the northernmost well on the property.

After initial water levels stabilized in the pits, a surveying team determined water levels in the pits and in all lakes in the immediate vicinity of the pumps. In addition, all free standing water (i. e., swamps) and canals were also determined. Extra additional points were chosen to help understand the localized water table. These extra points include the quarry water level and several other wells below the kiln area. Figure 1 shows the location of the measuring points within the immediate study area. The elevations for these measuring points are shown below:

	<u>Feet Above Mean Sea Level</u>
A. Canal Pit	4.70
B. Lake	4.33
C. Canal	5.81
D. Building Pit	3.22
E. Pump #1	2.27
F. Pump #2	1.85
G. Swamp Pit	2.87
H. Swamp	5.33
Well #100 (Kiln)	2.85
Well #200 (Fire Hydrant)	2.88
Quarry	3.37

The depths of the exploratory pits were limited because of the dense limestone which was encountered approximately at sea level. This layer was present in all three pits, and was the limiting factor in the depth of the holes. This layer is the same dense layer mentioned earlier, which is present throughout much of Dade County.



Rinker Materials Corporation

December 9, 1987

Page 4

5.0 DATA ANALYSIS

Through correlation of ground-water levels, it is evident that ground-water mounding occurs in the immediate vicinity of the wells. This mounding is a result of the impermeable dense limestone layer which displays a vertical permeability of roughly 1.95×10^{-5} ft/sec (6.0×10^{-4} cm/sec). The horizontal permeability is several orders of magnitude different than the vertical permeability. The average horizontal permeability of the Biscayne Aquifer is 0.02 ft/sec (0.61 cm/sec).

The mounding occurs as a direct result of the discharge from the plant's cooling water discharge pipe. In the immediate vicinity of the plant, the mound reaches a maximum level of 5.81 feet above sea level. The water level of the surficial aquifer is normally around 2.8 feet above sea level. The difference of 3.0 feet of water is due to the storage in the zone above the impermeable layer.

The drawdown associated with the two wells within the area of study, is not affected by the surficial mound of water. The area of the surficial aquifer immediately adjacent to the wells has no cascading waters into the well pits. Upper surficial aquifer water has been blocked, by fines, from entering the well area.

6.0 INVESTIGATION OF THE WELLFIELD PROTECTION ORDINANCE MODEL

On October 13, 1987, Mr. Steve Krupa of Dames & Moore conferred with Mr. Pete Hernandez of the Dade County Department of Environmental Resource Management (DERM) with regard to the well inventory used as a basis for the wellfield protection ordinance model. He indicated that the existing city wells are 90 feet deep and are cased to only 40 feet below the ground surface, leaving the remaining 50 feet as an open interval. He stated that the two Rinker Material Facility production wells had not been incorporated into the model. At the present time (i.e., October 13, 1987) the northwest wellfield is pumping at 155 million gallons per day, but the projected pumping rate of 220 million gallons per day (approximately by the year 1990) would put the Rinker facility within the 1/4 foot contour drawdown. Mr. Hernandez indicated that he was not aware as to the present location of the 1/4 foot drawdown contour (pumping rate of 155 million gallons per day). Mr. Hernandez indicated that the model did not take into consideration the presence of the thin



Rinker Materials Corporation

December 9, 1987

Page 5

aquiclude, located on top of the Biscayne Aquifer.

Mr. Krupa inquired upon the level of accuracy of the Dade County aquifer simulation model program (Prickett and Longquist, Two-Dimensional Model). Mr. Hernandez stated, "within a 2000 foot radius of wells, the water profile and the computer program do not correlate. Outside of that, everything matches up."

7.0 COMPUTER ANALYSIS

A computer generated simulation of the aquifer within the immediate vicinity of the Rinker Plant Facility was run. This simulation projected drawdown from a one foot radius from the pump center to a maximum of 2626 feet away. The aquifer thickness in this area has been assumed to be roughly 100 feet. A combined flow rate of both wells of 1500 gallons per minute was used in the analyses. For our analyses Darcy's Law was used, an axisymmetrical flow, and constant permeability were assumed. Zangar's (1953) correction method for partially penetrating wells was applied to the observed drawdown data, prior to analysis. Using the known conditions of radial distances and head for the quarry and the wells, we iterated on the permeability values until the drawdowns matched the corrected values of the field measurements. Superposition was used to evaluate the effects of the two well system. This provided an estimate of permeability of 2.82×10^2 cm/sec, or approximately 13,300 feet/day. The specific capacity of the model was calculated as follows:

$$S_w = Q/1.21 \text{ (model)} = (1500 \text{ gallons/min} \times 7.48 \text{ ft}^3/\text{gal})/1.21 \text{ feet}$$

$$S_w \text{ (model)} = 9272 \text{ ft}^2/\text{min}$$

7.1 RESULTS

The output from the computer program is presented as Table 1, and the description of the variables in Figure 2. The model indicates that, for the given pumping rate, the projected drawdown at the well is approximately 0.3 foot. This decreases with distance, being approximately 0.2 foot at a distance of approximately nine feet from the well. The drawdown is reduced to 0.1 foot at a distance of 171 feet from the well. This model provides estimated travel times for different distances from the production wells. Travel time to the well is one day at approximately 24 feet from the well. This becomes two days at approximately 39 feet from the wells, and increases to six days,



Rinker Materials Corporation

December 9, 1987

Page 6

at 66 feet from the wells. The projected travel times to the well (days) are only a rough estimates and the output can only be verified by actual in-situ testing.



DAMES & MOORE

A PROFESSIONAL LIMITED PARTNERSHIP

Rinker Materials Corporation

December 9, 1987

Page 7

We appreciate this opportunity to have been of service to Rinker Materials Corp., and look forward to continuing to serve you. Please do not hesitate to call, if you have any questions or comments on this report.

Very truly yours,

DAMES & MOORE

Andrew P. Schechter, P.E.
Manager, Waste Management/
Geosciences Division-Florida

Carlos F. Garcia
Project Hydrogeologist

APS/CFG

Rinker Materials Corporation

December 9, 1987

Page 8

REFERENCES

- Hoffmeister, J. E., Stockman, K. W., and Multer, H. G. Miami Limestone of Florida and Its Recent Bahamian Counterpart, Geological Society of America Bulletin, V. 78, p.175-190, February, 1967.
- Klein, Howard, and Sherwood, C. B. Hydrologic Conditions in the Vicinity of Levee 30, Northern Dade County, Florida, Florida Geological Survey, Report of Investigations No. 24, Hydrologic Conditions, Dade County, Florida, 1961
- Prugh, B. J., Dewatering Miami's Biscayne Aquifer, Journal of the Soil Mechanics and Foundations division, ASCE Vol 83, No. SM3 Proc. Paper 1299, July, 1957, pp. 1299-1-1299-15.
- Schmertmann, John H. Dewatering Case History In Florida, Journal of the Construction Division, ASCE September, 1974, pp. 377-393.
- Zangar, C. N., Theory and Problems of Water Percolation, Engineering Monographs 8, U. S. Bureau of Reclamation, Denver, Colorado, 1953,

BY Aggr DATE 12/77

CHECKED _____ DATE _____

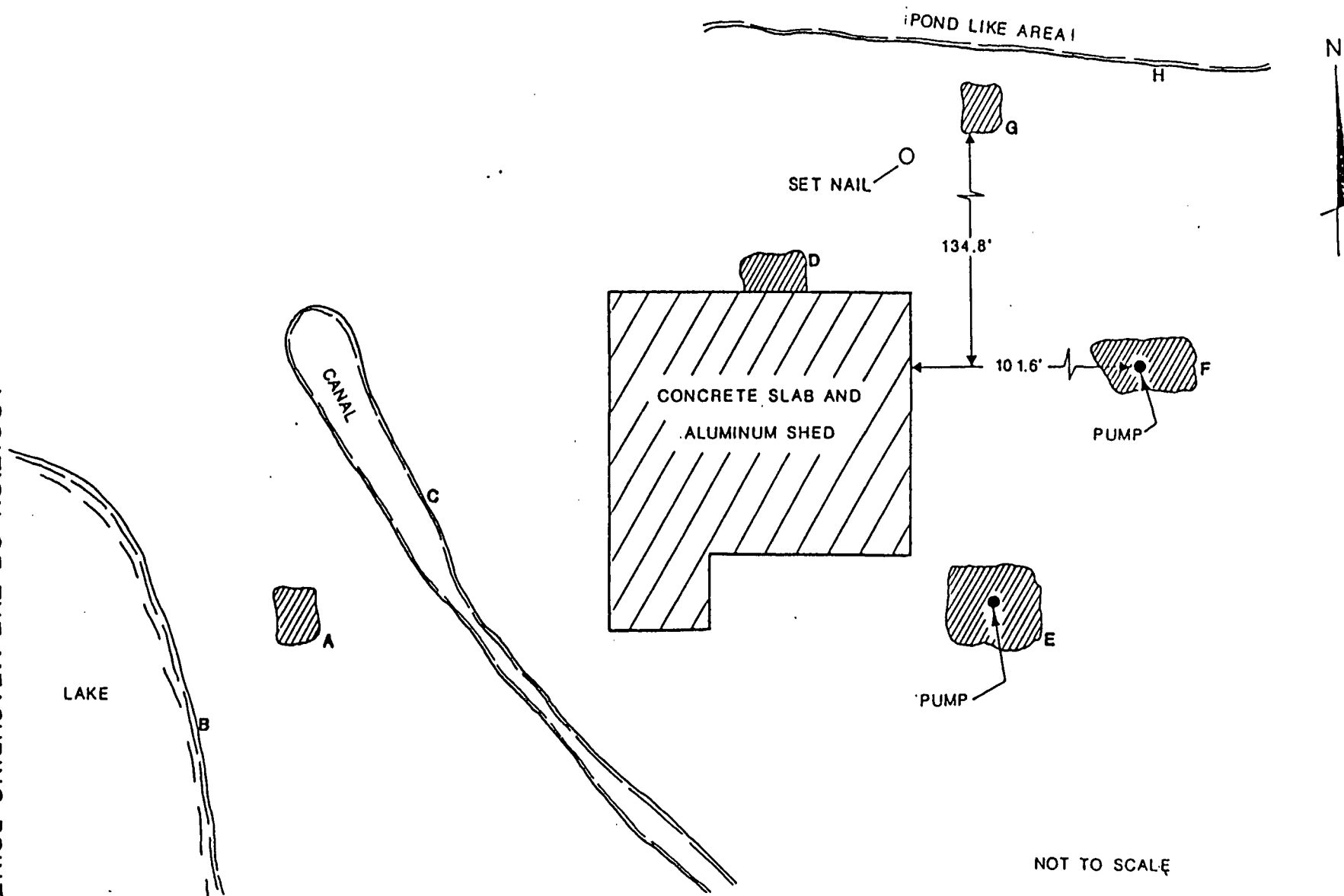
APPROVED _____ DATE _____

JOB No. 16198001024 (12/87)

PROJECT: RINKER MATERIALS CORP.
LOCATION: MIAMI, FLORIDA

LOCATION OF THE MEASURING POINTS
FOR THE HYDROGEOLOGIC STUDY

DAMES & MOORE
PLATE 1



BY Reyn DATE 12/77

CHECKED _____ DATE _____

APPROVED _____ DATE _____

JOB No. 16198001024 (12/87)

PROJECT: RINKER MATERIALS CORP.
LOCATION: MIAMI, FLORIDA

DARCY'S LAW FOR AXISYMMETRIC FLOW

DARCY'S LAW

$$Q = KIA = K \frac{\Delta H}{L} A$$

FOR AXISYMMETRIC FLOW

WHERE B = EFFECTIVE THICKNESS OF AQUIFER

$$L = \Delta R$$

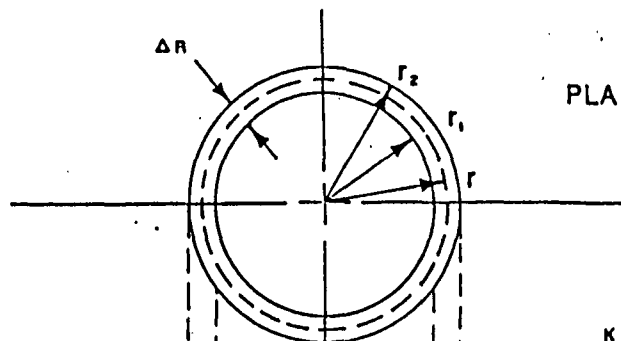
$$2\pi R = \text{CIRCUMFERENCE}$$

$$A = B \cdot 2\pi R = B (\text{CIRCUMFERENCE})$$

$$Q = K \frac{\Delta H_{1,1+1}}{\Delta R_{1,1+1}} 2\pi r B$$

$$\Delta H_{1,1+1} = \frac{Q \Delta R_{1,1+1}}{2\pi K B r}$$

PLAN VIEW:



KNOWN CONDITIONS

HEAD AT QUARRY (H_0) 3.37 ft. ABOVE M.S.L.

HEAD AT WELL (H_w) 2.27 ft. ABOVE M.S.L.

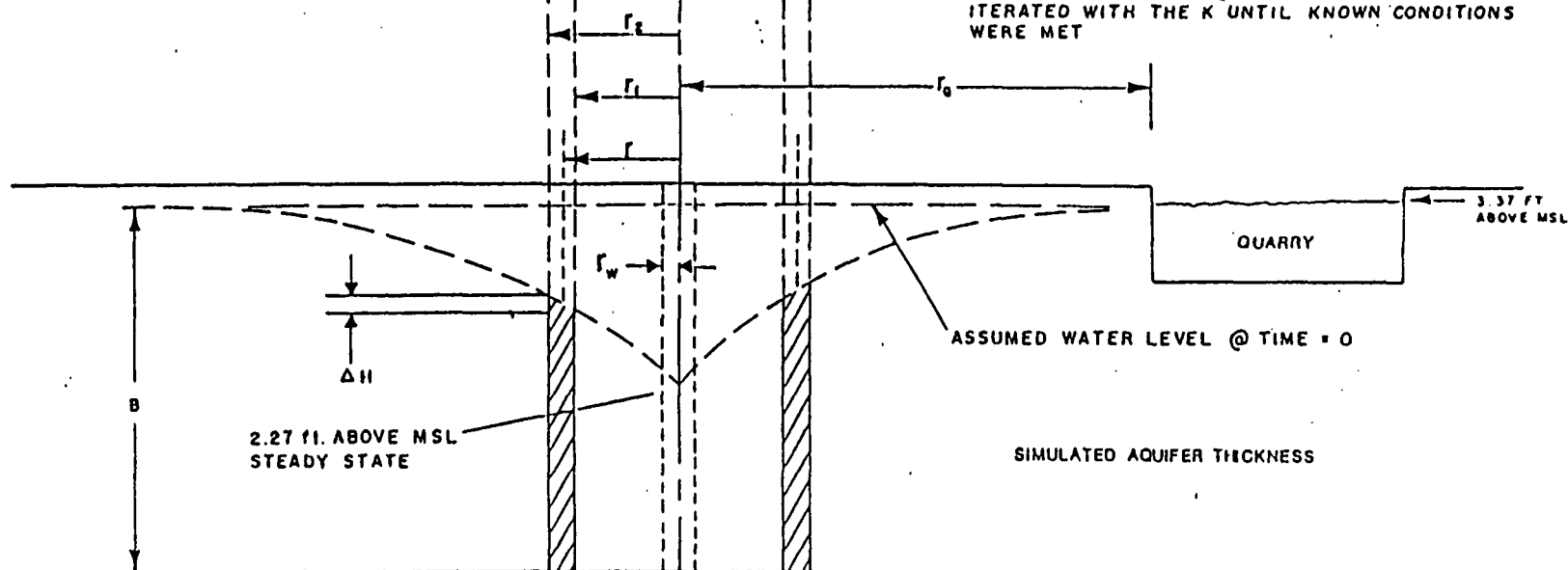
EFFECTIVE RADIUS OF WELL (r_w) .95 ft. (FULLY PENETRATING)

RADIUS TO QUARRY (r_0) ≈ 2621 ft.

FLOW RATE FROM WELLS 1500 GPM

$$\Delta H = H_0 - H_w = \frac{Q}{2\pi} \sum_{r=r_w}^{r=r_0} \frac{\Delta R_{1,1+1}}{B r K}$$

ITERATED WITH THE K UNTIL KNOWN CONDITIONS WERE MET



COMPUTER MODEL
FOR RINKER MATERIALS

DAMES & MOORE
FIGURE 2

CROSS-SECTION FOR COMPUTER OUTPUT
EAST-WEST

Table 1
Projected Drawdown & Travel Times
Binker Materials Corporation Site
Miami, Dade County, Florida

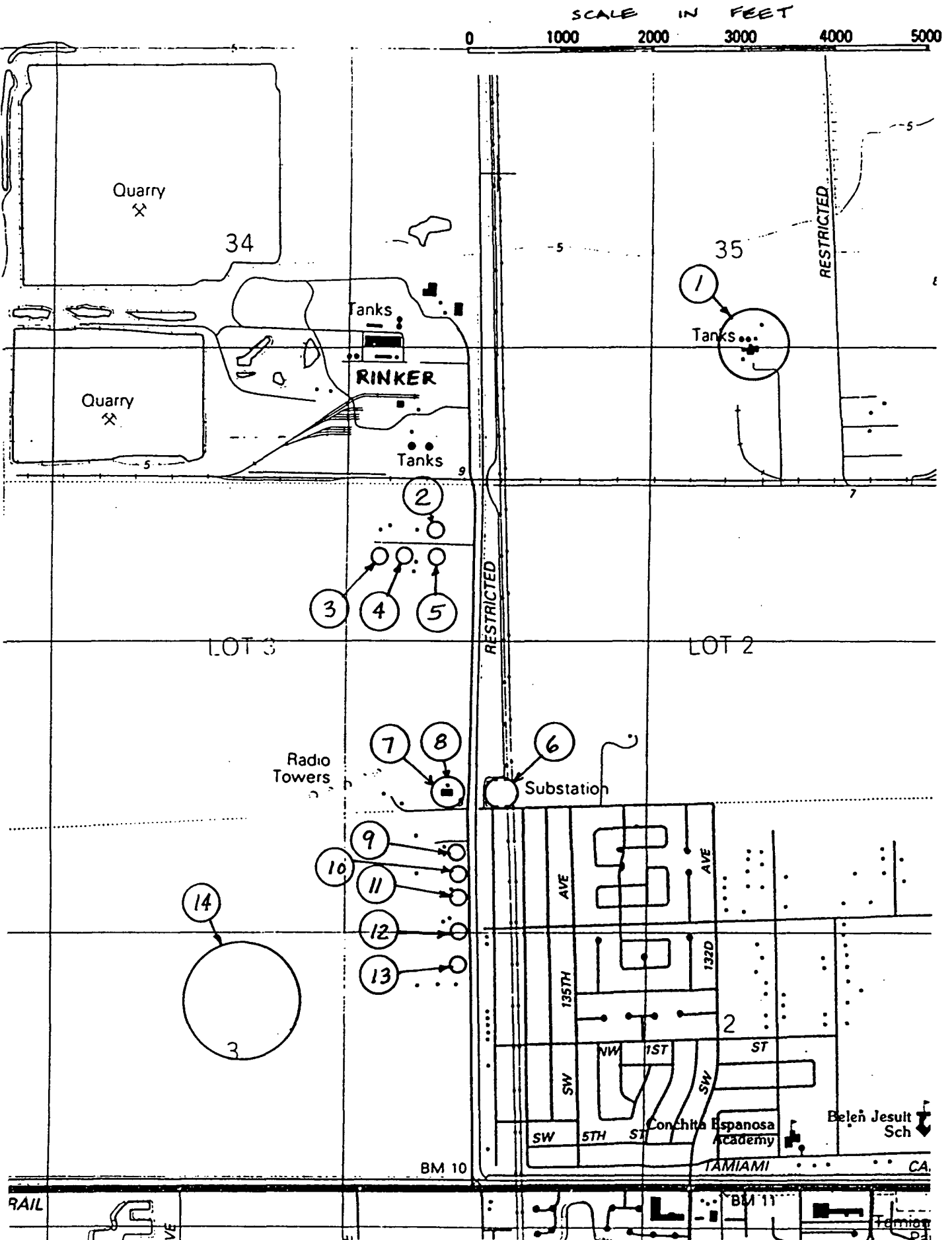
Initial Radius = 0.67 (feet)
Delta R = 5.0 (feet)
Flow rate = 1500.00 (gpm)
Permeability = 10000.0 (feet/day)
Thickness = 100.0 (feet)

Inside Radius (feet)	Delta R (feet)	Average Radius (feet)	Average Perimeter (feet)	Thickness Area (feet)	Delta H mound (feet)	Slope (-)	Drawdown (feet)	Time to Well (days)
0.7	0.1	0.7	4.4	100.0				
0.7	0.1	0.8	5.0	100.0	0.0039	0.03912	0.29	0.00
0.8	0.1	0.9	5.6	100.0	0.0043	0.04338	0.28	0.00
0.9	0.1	1.0	6.3	100.0	0.0039	0.03854	0.28	0.00
1.0	0.1	1.1	6.9	100.0	0.0035	0.03467	0.27	0.00
1.1	0.1	1.2	7.5	100.0	0.0032	0.03151	0.27	0.00
1.2	0.2	1.3	8.5	100.0	0.0029	0.01444	0.27	0.00
1.4	0.2	1.5	9.7	100.0	0.0051	0.02566	0.26	0.00
1.6	0.2	1.7	11.0	100.0	0.0045	0.02234	0.26	0.00
1.8	0.2	1.9	12.2	100.0	0.0040	0.01979	0.25	0.00
2.0	0.2	2.1	13.5	100.0	0.0036	0.01775	0.25	0.00
2.2	0.5	2.5	15.7	100.0	0.0032	0.00644	0.25	0.01
2.7	0.5	3.0	18.8	100.0	0.0069	0.01394	0.24	0.01
3.2	0.5	3.5	22.0	100.0	0.0052	0.01153	0.24	0.02
3.7	0.5	4.0	25.1	100.0	0.0049	0.00988	0.23	0.02
4.2	0.5	4.5	28.3	100.0	0.0043	0.00865	0.23	0.02
4.7	0.5	5.0	31.4	100.0	0.0038	0.00768	0.22	0.03
5.2	1.0	5.7	36.1	100.0	0.0035	0.00346	0.22	0.03
6.2	1.0	6.7	42.4	100.0	0.0060	0.00691	0.21	0.06
7.2	1.0	7.7	48.7	100.0	0.0051	0.00512	0.21	0.03
8.2	1.0	8.7	55.0	100.0	0.0045	0.00446	0.20	0.10
9.2	1.0	9.7	61.2	100.0	0.0040	0.00395	0.20	0.11
10.2	1.0	10.7	67.5	100.0	0.0035	0.00355	0.19	0.14
11.2	2.0	12.2	76.9	100.0	0.0032	0.00151	0.19	0.23
13.2	2.0	14.2	89.5	100.0	0.0056	0.00282	0.19	0.23
15.2	2.0	16.2	102.1	100.0	0.0049	0.00243	0.19	0.24
17.2	2.0	18.2	114.6	100.0	0.0043	0.00213	0.18	0.42
19.2	2.0	20.2	127.2	100.0	0.0038	0.00189	0.17	0.49
21.2	5.0	23.7	149.2	100.0	0.0034	0.00063	0.17	1.05
26.2	5.0	28.7	180.6	100.0	0.0073	0.00146	0.17	1.50
31.2	5.0	33.7	212.0	100.0	0.0060	0.00129	0.15	1.55
36.2	5.0	38.7	243.5	100.0	0.0051	0.00102	0.15	1.52
41.2	10.0	46.2	290.6	100.0	0.0045	0.00045	0.15	3.57
51.2	10.0	56.2	353.4	100.0	0.0075	0.00075	0.14	4.62
61.2	10.0	66.2	416.2	100.0	0.0061	0.00061	0.14	5.20
71.2	10.0	76.2	479.1	100.0	0.0052	0.00052	0.13	7.34
81.2	10.0	86.2	541.9	100.0	0.0045	0.00045	0.12	9.09
91.2	10.0	96.2	604.7	100.0	0.0040	0.00040	0.12	10.38
101.2	20.0	111.2	699.0	100.0	0.0036	0.00011	0.12	19.25
121.2	20.0	131.2	824.6	100.0	0.0062	0.00031	0.11	24.19
141.2	20.0	151.2	950.3	100.0	0.0053	0.00025	0.11	29.51
161.2	20.0	171.2	1076.0	100.0	0.0046	0.00023	0.10	36.39
181.2	20.0	191.2	1201.5	100.0	0.0040	0.00020	0.10	42.84
201.2	20.0	211.2	1327.3	100.0	0.0036	0.00012	0.09	52.16
221.2	50.0	246.2	1547.2	100.0	0.0033	0.00007	0.09	104.00

271.2	59.0	295.2	1861.4	100.0	0.0070	0.00014	0.09	135.41
321.2	59.0	345.2	2175.5	100.0	0.0058	0.00012	0.08	168.54
371.2	59.0	395.2	2489.7	100.0	0.0050	0.00010	0.07	206.31
421.2	59.0	446.2	2803.9	100.0	0.0044	0.00009	0.07	249.41
471.2	59.0	496.2	3118.0	100.0	0.0033	0.00008	0.06	297.95
521.2	59.0	546.2	3432.2	100.0	0.0035	0.00007	0.06	351.95
571.2	59.0	596.2	3746.3	100.0	0.0032	0.00006	0.06	411.36
621.2	59.0	646.2	4060.5	100.0	0.0029	0.00006	0.06	476.24
671.2	59.0	696.2	4374.6	100.0	0.0027	0.00005	0.05	546.55
721.2	59.0	746.2	4688.8	100.0	0.0025	0.00005	0.05	622.20
771.2	59.0	796.2	5003.0	100.0	0.0023	0.00005	0.04	703.45
821.2	59.0	846.2	5317.1	100.0	0.0022	0.00004	0.04	790.11
871.2	59.0	896.2	5631.3	100.0	0.0020	0.00004	0.04	882.17
921.2	59.0	946.2	5945.4	100.0	0.0019	0.00004	0.04	979.58
971.2	59.0	996.2	6259.6	100.0	0.0018	0.00004	0.04	1082.62
1021.2	59.0	1046.2	6573.8	100.0	0.0017	0.00003	0.03	1191.01
1071.2	59.0	1096.2	6887.9	100.0	0.0017	0.00003	0.03	1304.83
1121.2	59.0	1146.2	7202.1	100.0	0.0016	0.00003	0.03	1424.09
1171.2	59.0	1196.2	7516.2	100.0	0.0015	0.00003	0.03	1548.88
1221.2	59.0	1246.2	7830.4	100.0	0.0014	0.00003	0.03	1678.34
1271.2	59.0	1296.2	8144.6	100.0	0.0014	0.00003	0.03	1814.52
1321.2	59.0	1346.2	8458.7	100.0	0.0013	0.00003	0.03	1955.54
1371.2	59.0	1396.2	8772.9	100.0	0.0013	0.00003	0.02	2102.00
1421.2	59.0	1446.2	9087.0	100.0	0.0012	0.00002	0.02	2253.90
1471.2	59.0	1496.2	9401.2	100.0	0.0012	0.00002	0.02	2411.24
1521.2	59.0	1546.2	9715.4	100.0	0.0012	0.00002	0.02	2574.02
1571.2	59.0	1596.2	10029.5	100.0	0.0011	0.00002	0.02	2742.24
1621.2	59.0	1646.2	10343.7	100.0	0.0011	0.00002	0.02	2915.90
1671.2	59.0	1696.2	10657.8	100.0	0.0010	0.00002	0.02	3095.00
1721.2	59.0	1746.2	10972.0	100.0	0.0010	0.00002	0.02	3279.54
1771.2	59.0	1796.2	11286.2	100.0	0.0010	0.00002	0.01	3469.52
1821.2	59.0	1846.2	11600.3	100.0	0.0010	0.00002	0.01	3664.93
1871.2	59.0	1896.2	11914.5	100.0	0.0009	0.00002	0.01	3865.73
1921.2	59.0	1946.2	12228.6	100.0	0.0009	0.00002	0.01	4072.09
1971.2	59.0	1996.2	12542.8	100.0	0.0009	0.00002	0.01	4283.93
2021.2	59.0	2046.2	12956.9	100.0	0.0009	0.00002	0.01	4501.00
2071.2	59.0	2096.2	13171.1	100.0	0.0008	0.00002	0.01	4723.62
2121.2	59.0	2146.2	13485.3	100.0	0.0008	0.00002	0.01	4951.67
2171.2	59.0	2196.2	13799.4	100.0	0.0008	0.00002	0.01	5185.17
2221.2	59.0	2246.2	14113.6	100.0	0.0008	0.00002	0.01	5424.10
2271.2	59.0	2296.2	14427.7	100.0	0.0008	0.00002	0.01	5668.45
2321.2	59.0	2346.2	14741.9	100.0	0.0008	0.00002	0.00	5918.23
2371.2	59.0	2396.2	15056.1	100.0	0.0007	0.00001	0.00	6173.54
2421.2	59.0	2446.2	15370.2	100.0	0.0007	0.00001	0.00	6434.24
2471.2	59.0	2496.2	15684.4	100.0	0.0007	0.00001	0.00	6700.37
2521.2	59.0	2546.2	15998.5	100.0	0.0007	0.00001	0.00	6971.94
2571.2	59.0	2596.2	16312.7	100.0	0.0007	0.00001	0.00	7248.95
2621.2	59.0	2646.2	16626.9	100.0	0.0007	0.00001	0.00	7531.45

ATTACHMENT B

PRIVATE WELL LOCATIONS NUMBERED 1 - 14



KNOWN DETAILS OF PRIVATE WELLS, KEYED BY
NUMBER TO MAP :

MAP # 1. Owner: Florida Transport

1301 NW 14th ST, Miami

305 592 6927

Operates 1 well; 4-6-inches diameter;
depth \pm 60 feet; pumps 9,000 gallons/day.

MAP # 2. Owner: United Dump Trucks

unnamed road to W. of 137th Ave, Miami

305 822 3831

No known wells; may have well.

MAP # 3. Owner: Unknown

Operates one well on property; details
unknown.

MAP # 4. Owner: H & R Land Clearing and Demolition

unnamed road W. of 137th Ave, Miami

305-266-4266

No known wells on property; may have well.

MAP # 5. Owner: Miami Rental Equipment

unnamed road W. of 137th Ave, Miami

305 264 3647

No wells on this property

- MAP # 6. Owner: F P & L
13675 NW 6TH ST., Miami
305 552 4050
Operates one well; 4-inch diameter, depth unknown; well used to irrigate about 3 acres; max short-term pumping rate is 80 to 100 gpm.
- MAP # 7 and 8. Owner: Eagle Crest Storage and Dade Co. School Bus Storage (Mr. Shelby Strickland,
13775 NW 6TH ST.
305 552 5555
Operates one well; 4-inch diameter; depth 30 feet; pumping rate is unknown.
- MAP # 9. Owner: Azpetia Trucking
550 NW 137 Ave, Miami
305 226 7484
No known wells; well may exist.
- MAP # 10. Owner: Walter Lista
450 NW 137TH Ave, Miami
305 551 7888
No known wells; well may exist.
- MAP # 11 and 12. Unused properties; no known wells.

MAP # 13. Owner: Volunteer Construction Co.
90 NW 137th Ave
— a "for lease" sign shows 305 593 2071
No known wells; well may exist; site not
currently in use.

MAP # 14. Owner: Osprey Agricultural Services
8255 NW 58th St, Miami
305 592 0194
Operates four wells for irrigation; each
is 2-inch diameter; depth is 20 feet;
max short term pumping rate is
50 gpm per well.



ENVIRONMENTAL RESOURCES MANAGEMENT
SUITE 1310
111 N.W. 1st STREET
MIAMI, FLORIDA 33128-1971
(305) 375-3376

RECEIVED

September 26, 1991

JUN 7 1996

Mr. James S. Jenkins III
Rinker Materials Corp.
P.O. Box 24635
West Palm Beach, Florida 33416

CERTIFIED MAIL NO. P-731-362-836
RETURN RECEIPT REQUESTED

RE: Groundwater Monitoring Plan for Rinker Materials Cement Mill
located at 1200 N.W. 137th Avenue, Miami, Dade County,
Florida.

Dear Mr. Jenkins:

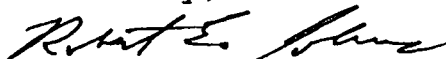
The Hazardous Waste Section of the Department of Environmental Resources Management (DERM) has reviewed the groundwater monitoring plan dated January, 1991 and the addendum dated April, 1991 for the soil thermal treatment permit, SW-1117, and approves it with the following modifications:

1. The surface water (isolated drainage canal) located south of the soil storage area shall be sampled semi-annually for the following parameters: metals, volatile organic aromatics, and poly aromatic hydrocarbons.
2. The background well (MW#1) shows elevated levels of chromium (.06 mg/L). Upon installation of the new background well (MW#23) this well must be immediately sampled. If this installation is not completed by October 31, 1991, MW#1 must be resampled for chromium.
3. DERM requires three (3) working days notice prior to all sampling and well installations.
4. Prior to the abandonment of any of the upgradient monitoring wells, DERM must give written approval.
5. Analytical results must be submitted to DERM within forty-five (45) days of sampling.
6. The lab to be used for analysis must have a Florida DER QUAPP and be a Florida HRS-certified lab.

7. DERM has the option to split any samples deemed necessary with the consultant or laboratory at the subject site. If data is subsequently submitted which exhibits a substantial variance from the DERM split sample analysis, DERM will then require a complete resampling using two independent certified laboratories.

If you have any questions concerning this approval please contact Lori Cunniff of the Solid Waste Program at 375-3321.

Sincerely,



Robert E. Johns, Chief
Hazardous Waste Section
POLLUTION CONTROL DIVISION

LC:ml

GSI groundwater
specialists, inc.

3003 South Congress Avenue, Suite 1C
Palm Springs, Florida 33461

TEL: 407/641-5355
FAX: 407/641-5282

April 12, 1991
RNK

Ms. Zoe Kulakowski
Florida DER
Bureau of Waste Cleanup
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32339-2400

Re: Supplements/Revisions to Addendum A, Groundwater Monitoring
Plan of April 1991, Rinker Portland Cement Corp., Miami,
Florida.

Dear Ms. Kulakowski:

Thank you for taking the time to discuss the referenced GWMP. As you stated in our telephone conversation this morning, you will approve the GWMP as supplemented with information in this letter. The following items provide that information as well as a revision of the slug test on Piezometer 18.

- Item 1. Well 23 will be added to the list of wells for water quality monitoring. Please see the attached revision to Exhibit A10.
- Item 2. The analytical methods to be used for the analyses of groundwater samples will include EPA Methods 602 and 610, in addition to those listed under Response 13 of the GWMP.
- Item 3. As per our discussion, the slug test analysis for Piezometer 18 was revised. The revision is herewith enclosed. The revision results in a higher hydraulic conductivity and transmissivity. These higher figures cause higher averages for these parameters as follows:

Average Hydraulic Conductivity:	14.75 gpd/sq ft.
Average Transmissivity:	105.25 gpd/ft.

Please note that these figures apply to the uppermost portion of the shallow zone. Also, please note that Piezometers 2 and 19 were tested. Piezometer 2 produced

2

the lowest value and Piezometer 19, the highest value. These high and low values were rejected. Piezometer 1 also was tested but the results could not be analyzed.

Again, thank you for your careful review and timely attention to this matter.

Very truly yours,
GROUNDWATER SPECIALISTS, INC.

Paul G. Jakob, P.G.
President

PGJ/db

cc: Mr. Michael Vardeman, Rinker Portland Cement Corp.

EXHIBIT A10

SUMMARY OF MONITORING SCHEDULE

Phase II - With Existing Soil Storage Slab

<u>Monitoring Point</u>	<u>Analyses</u>	<u>Water Levels</u>
Well 6	X	X
Well 7	X	X
Well 8	X	X
Well 9	X	X
Well 10	X	X
Well 11	X	X
Well 12	X	X
Well 13	X	X
Well 14	X	X
Well 17		X
Well 18		X
Well 19		X
Well 23	X	X
SW 3		X
SW 7		X
SW 8		X
SW 9		X

Phase III - Upon Operation of Proposed Soil Storage Building

<u>Monitoring Point</u>	<u>Analyses</u>	<u>Water Levels</u>
Well 2	X	X
Well 5	X	X
Well 6	X	X
Well 7	X	X
Well 8	X	X
Well 9	X	X
Well 10	X	X
Well 11		X
Well 17		X
Well 18		X
Well 19		X
Well 23	X	X
Well 24	X	X
Well 25	X	X
SW 3		X
SW 7		X
SW 8		X
SW 9		X

Note: The transition from use of the existing to the proposed facilities is described in the text.

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "R" (#18) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

D = 2 = well diameter (inches)
 BH = 8 = borehole diameter (inches)
 RI = 0.08 = radius of well (feet)
 Rc = 0.20833 = radius of well section where water level is rising (feet)
 Re = = effective radial distance over which head difference (y) is dissipated (feet)
 Rw = 0.33 = borehole radius (feet)
 Le = 1.56 = length of saturated screen (feet)
 yo = 12.00 = y intercept at time 0 (feet)
 yt = 0.62 = y intercept at time t (feet)
 t = 605.00 = time in seconds after start of test (seconds)
 H = 7.00 = saturated thickness of aquifer (feet)
 Lw = 1.56 = length from water table to bottom of wellscreen (feet)
 A = 2.00 = dimensionless coefficient
 B = 0.60 = dimensionless coefficient
 C = 1.40 = dimensionless coefficient

EQUATIONS:

$$\ln(Re/Rw) = \frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

Le/Rw = 4.7
 Lw/Rw = 4.7
 H-Lw = 5.44
 Rc * Rc = 0.043
 2 * Le = 3.12
 1/t = 0.002
 ln(yo/yt) = 3.0
 ln(Re/Rw) = 0.7
 ln[(H-Lw)/Rw] = 2.7 (if >6, then 6 is used in equation)

K = 0.00005 = hydraulic conductivity (ft/second)
 K = 29 = hydraulic conductivity (gpd/sq ft)
 T = 206 = transmissivity (gpd/ft)

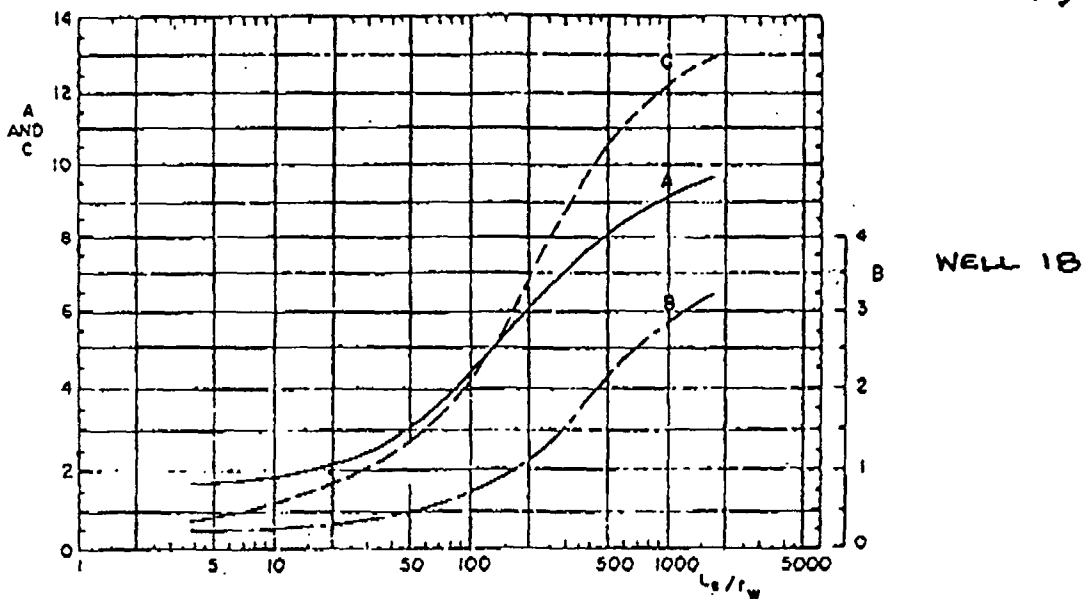
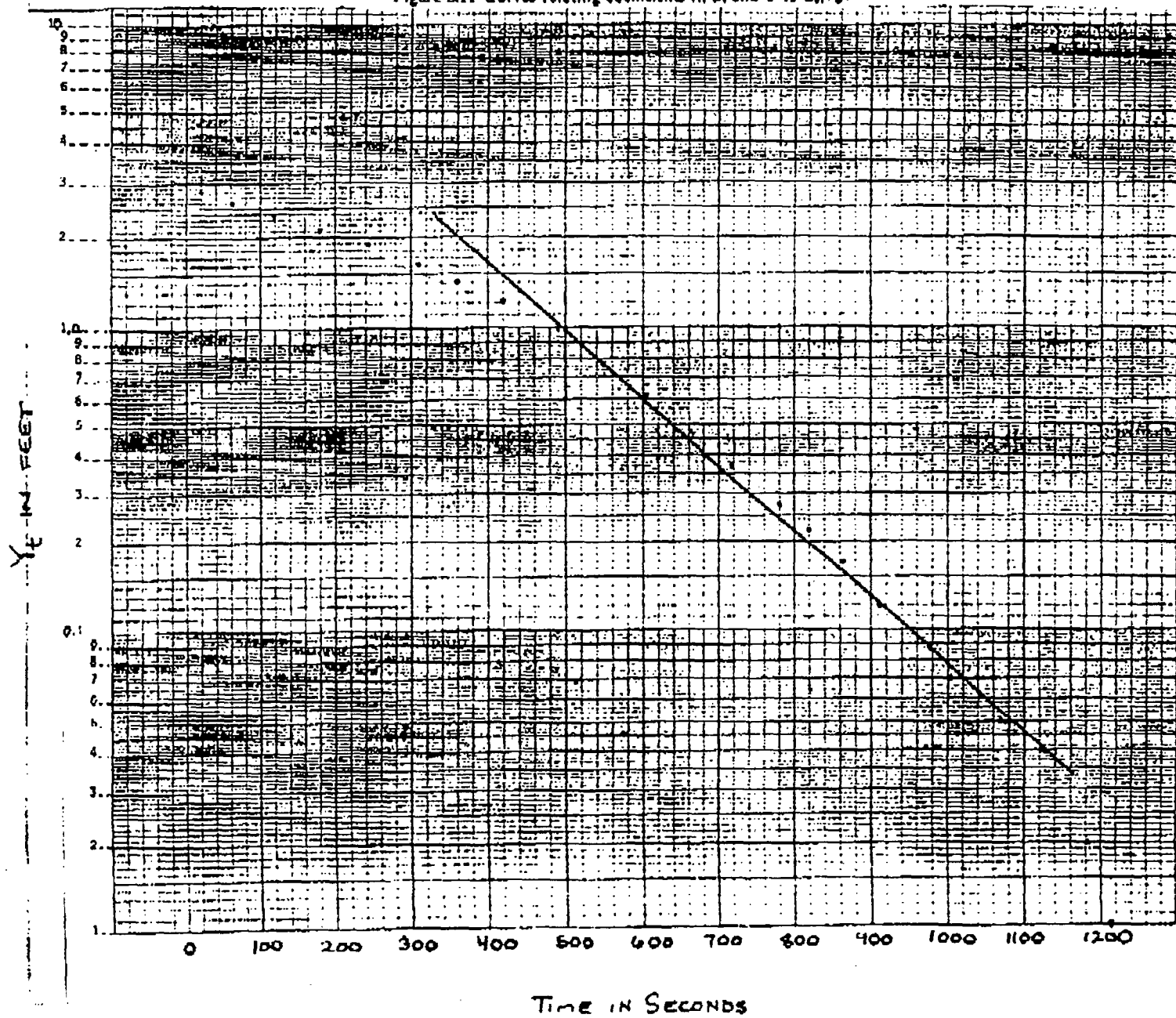


Figure 3.11 Curves relating coefficients A, B, and C to L_e/r_w .



RECEIVED

April 12, 1991
RNK

JUN 7 1996

Certified Mail #P 514 095 307
Return Receipt Requested

Ms. Zoe Kulakowski
Florida DER DEPT OF ENV PROTECTION
Bureau of Waste Cleanup
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32339-2400

Re: Supplements/Revisions to Addendum A, Groundwater Monitoring
Plan of April 1991, Rinker Portland Cement Corp., Miami,
Florida.

Dear Ms. Kulakowski:

Thank you for taking the time to discuss the referenced GWMP. As you stated in our telephone conversation this morning, you will approve the GWMP as supplemented with information in this letter. The following items provide that information as well as a revision of the slug test on Piezometer 18.

- Item 1. Well 23 will be added to the list of wells for water quality monitoring. Please see the attached revision to Exhibit A10.
- Item 2. The analytical methods to be used for the analyses of groundwater samples will include EPA Methods 602 and 610, in addition to those listed under Response 13 of the GWMP.
- Item 3. As per our discussion, the slug test analysis for Piezometer 18 was revised. The revision is herewith enclosed. The revision results in a higher hydraulic conductivity and transmissivity. These higher figures cause higher averages for these parameters as follows:

Average Hydraulic Conductivity:	14.75 gpd/sq ft.
Average Transmissivity:	105.25 gpd/ft.

Please note that these figures apply to the uppermost portion of the shallow zone. Also, please note that Piezometers 2 and 19 were tested. Piezometer 2 produced the lowest value and Piezometer 19, the highest value. These high and low values were rejected. Piezometer 1 also was tested but the results could not be analyzed.

Again, thank you for your careful review and timely attention to this matter.

Very truly yours,
GROUNDWATER SPECIALISTS, INC.

 4.12.91

Paul G. Jakob, P.G.
President

PGJ/db

cc: Mr. Michael Vardeman, Rinker Portland Cement Corp.

EXHIBIT A10

SUMMARY OF MONITORING SCHEDULE

Phase II - With Existing Soil Storage Slab

<u>Monitoring Point</u>	<u>Analyses</u>	<u>Water Levels</u>
Well 6	X	X
Well 7	X	X
Well 8	X	X
Well 9	X	X
Well 10	X	X
Well 11	X	X
Well 12	X	X
Well 13	X	X
Well 14	X	X
Well 17		X
Well 18		X
Well 19		X
Well 23	X	X
SW 3		X
SW 7		X
SW 8		X
SW 9		X

Phase III - Upon Operation of Proposed Soil Storage Building

<u>Monitoring Point</u>	<u>Analyses</u>	<u>Water Levels</u>
Well 2	X	X
Well 5	X	X
Well 6	X	X
Well 7	X	X
Well 8	X	X
Well 9	X	X
Well 10	X	X
Well 11		X
Well 17		X
Well 18		X
Well 19		X
Well 23	X	X
Well 24	X	X
Well 25	X	X
SW 3		X
SW 7		X
SW 8		X
SW 9		X

Note: The transition from use of the existing to the proposed facilities is described in the text.

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "R" (# 18)

RNK2002

DATE: MARCH 27, 1991

DEFINITIONS:

D	=	2	=	well diameter (inches)
BH	=	8	=	borehole diameter (inches)
RI	=	0.08	=	radius of well (feet)
Rc	=	0.20833	=	radius of well section where water level is rising (feet)
Re	=		=	effective radial distance over which head difference (y) is dissipated (feet)
Rw	=	0.33	=	borehole radius (feet)
Le	=	1.56	=	length of saturated screen (feet)
yo	=	12.00	=	y intercept at time 0 (feet)
yt	=	0.62	=	y intercept at time t (feet)
t	=	605.00	=	time in seconds after start of test (seconds)
H	=	7.00	=	saturated thickness of aquifer (feet)
Lw	=	1.56	=	length from water table to bottom of wellscreen (feet)
A	=	2.00	=	dimensionless coefficient
B	=	0.60	=	dimensionless coefficient
C	=	1.40	=	dimensionless coefficient

EQUATIONS:

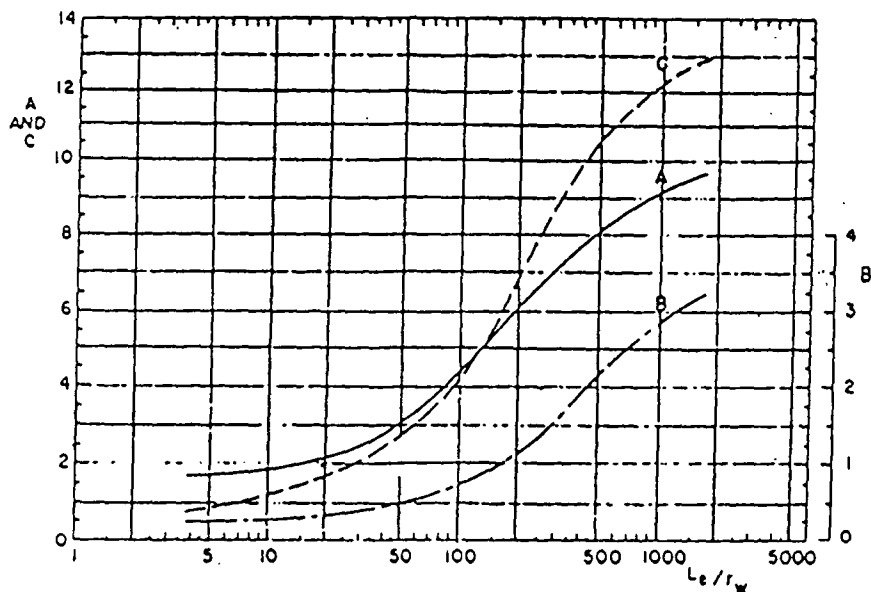
$$\ln(Re/Rw) = \frac{1.1}{\ln(Lw/Rw)} + \frac{1}{\frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

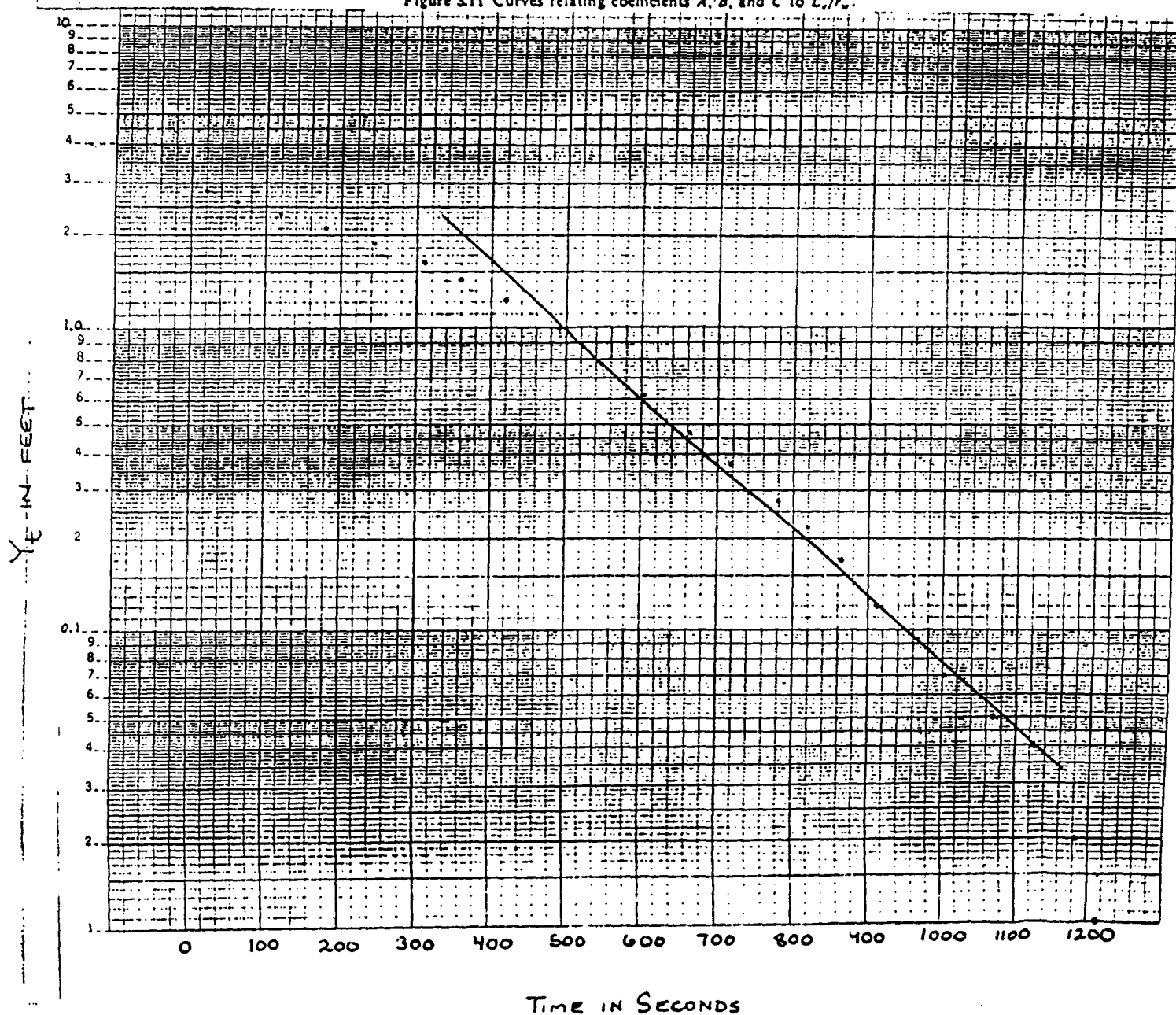
SOLUTIONS:

Le/Rw =	4.7
Lw/Rw =	4.7
H-Lw =	5.44
Rc * Rc =	0.043
2 * Le =	3.12
1/t =	0.002
ln(yo/yt) =	3.0
ln(Re/Rw) =	0.7
ln[(H-Lw)/Rw] =	2.7 (if >6, then 6 is used in equation)

K	=	0.00005	=	hydraulic conductivity (ft/second)
K	=	29	=	hydraulic conductivity (gpd/sq ft)
T	=	206	=	transmissivity (gpd/ft)



WELL 18

Figure S.11 Curves relating coefficients A, B, and C to L_e/r_w .

RECEIVED

JUN 7 1996

DEPT OF ENV PROTECTION
WEST PALM BEACH

GROUNDWATER MONITORING PLAN

ADDENDUM A

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

April 1991

Prepared for:

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

Prepared by:

Groundwater Specialists, Inc.
3003 S. Congress Avenue
Suite 1C
Palm Springs, Florida 33461

TABLE OF CONTENTS

Introduction	1
Supplemental Information As Recommended.	1
Additional Information	7
Revised Proposal	8

EXHIBITS

Site Plan.	A1
Piezometer Dimensions, Groundwater and Surface-Water Elevation.	A2
Surface-Water Measurement Points and Description of Surface-Water Bodies	A3
Shallow-Zone Groundwater Contours.	A4
Deep-Zone Groundwater Contours	A5
Summary of Analyses - Well 1	A6
Filled Area.	A7
Stratigraphic Cross-Section.	A8
Summary of Pumping/Recovery Test Data.	A9
Summary of Monitoring Schedule	A10
Wells and SW Points for GWMP	A11

APPENDICES

FDER Letter of January 22, 1991.	AA
Typical Piezometer Diagrams.	AB
Reports of Analyses.	AC
Results of Aquifer Tests	AD
Data from Rinker's Sweetwater Ready Mix Plant.	AE
FDER Letters of QAP Approvals.	AF

ADDENDUM A

GROUNDWATER MONITORING PLAN

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

Introduction

This Addendum supplements information in the Groundwater Monitoring Plan (GWMP) of January 1991, submitted to the Florida DER as part of the General Permit Application to Construct/Operate a Soil Thermal Treatment Facility as per Chapter 17-775, FAC. It provides information as recommended in a letter from Ms. Zoe Kulakowski (Florida DER), to Mr. Michael Vardeman (Rinker Portland Cement Corp.), dated January 22, 1991, and new and revised proposals relating to schedules of data collection and submittal.

Supplemental Information As Recommended

Ms. Kulakowski's letter recommends that certain information be provided in the application for a general permit to construct/operate the soil thermal treatment facility. The letter enumerates Items 1 through 17; in this Addendum, these are referred to as requests for information. A copy of Ms. Kulakowski's letter is included herewith as Appendix AA.

As consultants to Rinker, GSI (Groundwater Specialists, Inc.) has prepared Responses 1 through 17, that correspond to the requests for information. A restatement of the requests and responses follow:

Request 1. Install a sufficient number of piezometers/wells screened in the water table zone only to establish site groundwater flow patterns and to use for selecting monitor well locations. Incorporate surface water features into the elevation network. If the site flow directions are seasonally variable and nonuniform as believed by Dames and Moore, this entire network may also be needed for quarterly water elevation data. Provide construction details for the piezometers/wells.

Response 1. During the week of March 18, 1991, 22 piezometers were installed on the subject property. In the subsurface, all of these structures were constructed as permanent monitor wells. The wellhead configuration varied depending on their locations relative to on-site traffic. Of the piezometers, 19 are "shallow", with wellscreens set within sediments between depths from 2 to 11 feet. The remaining three piezometers are "deep", with wellscreens set within the upper portion of the Fort Thompson formation, the Biscayne Aquifer. The locations of the piezometers are shown on

Exhibit A1. The dimensions and top-of-casing elevations of all piezometers are shown on Exhibit A2. Typical well construction diagrams are shown in Appendix AB.

In addition to the piezometers, water-level measuring points were established at all significant surface-water bodies within and surrounding the property. The locations of the measuring points and the identity of each surface-water body are shown on Exhibits A1 and A3, respectively.

On March 25, 1991, when the two process wells (Wells PN and PS) were operating as they do on a continuous basis, water-level elevations in all piezometers and surface-water bodies were measured. These are summarized on Exhibit A2. The configuration of the water table in the shallow zone is shown on Exhibit A4. The configuration of water-levels in the deep zone is shown on Exhibit A5. As shown on the exhibits, the shallow-zone flow direction is predominantly eastward to the regional canal, with considerable influence to the north caused by returned cooling water on the Rinker property. The only discernable deep-zone flow direction is toward Rinker's process wells, Wells PN and PS.

Request 2. Establish background groundwater quality for the GWMP. Any existing chemical data may be used from other permitted sites nearby or the ambient groundwater monitoring network.

Response 2. On March 22, 1991, Piezometer 1 was sampled according to conditions described in GSI's generic QAP (#880557G). Piezometer 1 is located on the southern edge of the property and the southern edge of the proposed soil storage area. It is intended to represent an upgradient, background location. The sample was analyzed for parameters outlined in Chapter 17-775.610(4), (FAC), for monitoring during implementation of the GWMP. The results of analysis are summarized on Exhibit A6. The laboratory reports are presented in Appendix AC.

Request 3. On Figure 2, show all surface water features that are shown on Plate 1 (Dames and Moore 12/9/87) and Exhibit 1. How deep are the little lakes and the canal? Do they breach the dense limestone?

Response 3. All significant surface-water features are shown on Exhibit A1. The pits excavated by Dames & Moore have been backfilled with materials excavated from the pits. The "pond-like area" and "lake" on Dames & Moore's Plate 1 correlate with surface-water bodies connected to SW1 and SW5, respectively. Please note that Dames & Moore's Plate 1 is conceptual in nature, not to scale.

A description of the ponds, canals and quarries is shown on Exhibit A3. These are referenced by measuring points on each of these surface-water bodies (SW1 through SW9). The only known breaches of the hard, dense limestone layer on the property are the

two quarries and the fire well (within the fire house) and process wells (Wells PN and PS). Stratigraphic data show that the dense limestone lies generally between 14 and 19 feet below grade in the filled areas of the property. The filled areas are approximately as shown on Exhibit A7. A stratigraphic cross section is shown on Exhibit A8 [Piezometer 22 apparently is placed on higher land, partially filled to construct a road.].

Request 4. Identify the locations of Well #100, Well #200, the fire protection well (is it at the fire pump house?), and the plant cooling water discharge pipe release point.

Response 4. Well #100 is the potable water well; its location is beneath the kiln. Well #200 is inside the fire pump house. There are three points at which cooling water is released to surface water bodies. These points are described on Exhibits A1 and A3.

Request 5. Provide at least three lithologic logs to establish the site stratigraphy.

Response 5. Three lithologic logs represented on a stratigraphic cross section are shown on Exhibit A8. The section shows the lithology determined by spilt-spoon borings at the locations of Piezometers 20 and 22, and Soil Boring 1 (SB1).

Request 6. Provide well construction details (example: annulus completion), lithologic logs and measured cones of depression for the process water wells.

Response 6. The process water "wells" (Wells PN and PS) were constructed as open pits with a total depth that penetrates the uppermost part of the high-permeability Fort Thompson formation - the Biscayne Aquifer. The pits occupy an area of approximately 10 by 20 feet at land surface. There are no available lithologic logs derived during the excavation of the pits. However, a lithologic log is available from Piezometer 20, located about 123 feet from both pits; this log is shown on the stratigraphic cross section, Exhibit A8. A cross section showing the pit's relationship to the lithology is included in Appendix AD.

The measured cones of depressions in the shallow and deep zones created by the process wells (Wells PN and PS) are depicted on Exhibits A4 and A5. These cones of depression represent a steady-state condition as they are based on measurements made during a time when the continuously-operating process wells were operating.

In order to determine the drawdown and recovery caused by operating Wells PN and PS, Well PN was shut down for a 1/2-hour period on March 26, 1991, during which time water-level recovery then drawdown were measured in Piezometers 15, 16, and 20, as well as in Wells PN and PS. These piezometers lie equidistant from

Wells PN and PS. [Due to continuous demand for water by the cement manufacturing process, it is not possible to shut down either of the wells for a longer period] Exhibit A9 is a summary of data derived from the recovery test. Further discussion and conclusions of the test are contained in Appendix AD.

Request 7. Detail every movement and the onsite process of remediating the contaminated soils brought onsite. Address unloading/loading, storage of treated/untreated soils, weighing, and specific locations of all activities.

Response 7. The present soil handling practice is that incoming soils are dropped, screened and reloaded onto trucks, on the existing soil storage slab. This soil storage slab is now covered with a canvass roof. The soil storage slab drains within a bermed area; collected water is pumped into a dedicated tank. A licensed waste-water hauler empties the tank and discharges the water into the wastewater feed system from which it is piped to the kilns.

Contaminated soils that arrive at the plant for thermal treatment are first weighed on the incoming trucks at the scale house. Any truck noted to be dripping water is turned away at that point. After weighing, the incoming trucks are directed to the soil-storage building where they dump their loads under the roof and on the concrete floor of the building. The trucks leave the property with a stop at the scale after their loads are dropped. The contaminated soils within the building are then screened to eliminate metals, plastics and other materials potentially damaging to later processing. [These miscellaneous materials are collected in a designated dumpster for subsequent delivery to a sanitary landfill.] After screening, the soils are loaded within the soil-storage building onto a designated truck. A dedicated front-end loader is used. The loaded truck delivers the soil into the west entrance of the Raw Material Feed Building where the soils are dropped on a concrete slab under roof. The concrete slab is bermed and has a contained leachate collection system. Water from the system is delivered to the wastewater feed system then into the kilns. The delivery truck circulates between the two under-roof locations. From the Raw Materials Feed Building, the process slurry is routed to the kilns through an above-ground piping system. After treatment in the kilns, the resulting clinker is crushed, sampled and analyzed.

Request 8. Is any response of the water table zone observed in the immediate vicinity of each process water well? Establish whether flow in the water table zone is totally independent of pumping the Biscayne process wells.

Response 8. A significant response in the water-table zone was noted during the test on Well PN. This is because the water-table (shallow) zone is well connected hydraulically to Well PN and provides a substantial flow of water to Wells PN and PS. However,

the water-table zone is concluded to be isolated from the deep zone on the basis of several observations. These include: (1) the hard, dense nature of the limestone between 14 and 19 feet (no evidence of cracks or solution holes in this limestone are known to exist), (2) the water level in the shallow zone is 0.12 feet lower than in the deep zone at well pairs, Well 16 and Well 20, (3) the degree of response to the recovery test was significantly different in the two zones, and (4) the notable lack of response to pumping in the shallow zone, due to pumping deep-zone wells at the Sweetwater Ready Mix Plant (see Appendix AE). Waters of the shallow and deep zones are known to intermingle at the locations of the quarries and Wells PN and PS because the confining layer is breached. Thus, the water-table zone is not independent of the deep zone in the near vicinity of the quarries and Wells PN and PS, but it is at other locations on the site. Please refer also to Response 6 and Appendix AD.

Request 9. How deep did the trench extend for the underground pipeline and the W. I. pipe? Was the dense limestone unit breached during construction?

Response 9. The trench for the underground oil pipeline is only 5 to 6 feet below grade. This is not deep enough to breach the dense limestone.

Request 10. Did Dames & Moore excavate a pit around both process wells during the December 1987 study? If so, how was well construction integrity restored? Please explain what was meant by "no cascading water into the well pits". Was the pit water elevation compared to the pumping well water elevation?

Response 10. Dames & Moore did not excavate the pits around Wells PN and PS. They did, however, construct other pits that were subsequently backfilled with the same materials excavated. These later pits did not breach the dense limestone.

The statement regarding "no cascading water" referred to the visible lack of water cascading from the water-table zone, over the inner wall of the well pits, and down to the water level in the pits. This is not surprising as the actual depth of the dense limestone is beneath the normal water level in the pit; thus, any tendency to "cascade" would be underwater and not observable. The present author believes that Dames & Moore mistook the level of the dense limestone layer in the area of Wells PN and PS, to be about five feet higher than its actual level. In short, the "no cascading water" statement is insignificant.

Request 11. Propose an unaffected natural background well. Wells 1, 4, 6, and 7 are too close to potential sources to be used for this purpose.

Response 11. Under existing conditions, Piezometer 1 is selected to be an unaffected background well. Piezometer 1 was sampled/analyzed as noted on Exhibit A6. Proposed Well 23, discussed below, will be installed as a natural background well.

Request 12. Without the site specific flow information, review cannot be completed of the proposed monitor well locations. I concur with the proposed shallow construction (water table zone) for the potential source areas. Since the objective of this GWMP is to detect any discharge to groundwater, the proposed monitor wells will need to be located as close to the unit as possible on the downgradient side. Examples of potential sources are the truck scale, truck unloading pad, the proposed soils storage area(s), the oil line to the kiln (to increase BTUs?), the inlet and outlet and the pressure cleaning facility (to wash out trucks?).

Response 12. As noted on the cited exhibits, the groundwater flow direction in the areas of concern have been determined to be generally northward in the water-table and in the areas where contaminated soils are and will be handled. The areas of concern include the truck scale, the existing soil storage slab (covered), proposed soil storage building and the Raw Materials Feed Building entrance. The active oil line to the kiln is unrelated to the Chapter 17-775 features of this GWMP. Likewise, the pressure cleaning facility is a wholly enclosed facility with no release of water. The previously indicated monitor well in this cleaning facility is a sump in an enclosed vault, not a monitor well. The second truck cleaning facility near the scale house is used to clean dust from outgoing cement haulers; water from that facility drains into the ditch referred to as measuring point SW4. No trucks that contained contaminated soils are cleaned at either of the two cleaning facilities. There are no other points on the property, not previously described, that are potential contamination source areas as related to the handling of incoming contaminated soils.

Request 13. Identify the specific analytical methods for metals to be used for every sampling event.

Response 13. The analytical methods to be used in the GWMP are prescribed in Chapter 17-775.610(4), FAC. The metals and respective EPA Methods that will be used are: arsenic, 206.3; barium, 208.2; cadmium, 213.2; chromium, 218.2; lead, 239.2; mercury, 245.1; selenium, 270.3; and silver, 271.2. Sampling conducted within the GWMP will be under GSI's generic QAP (#880557G); the FDER approval notice of this document is shown in Appendix AF. Samples will be analyzed by V.O.C. Analytical, Inc. under its approved generic QAP (#900376G); approval notice also is shown in Appendix AF.

Request 14. Describe well purging procedures. Will pH, specific conductivity, and temperature be monitored until stabilized to

document sufficient purging? Field parameters should be reported with the data.

Response 14. Pre-sampling well purging will be accomplished by pumping from the wells using clean stainless steel tubes and under the conditions of GSI's generic QAP. Measurements of pH, specific conductivity, and temperature will be made from well-purge water until these parameters have stabilized. The results of these measurements will be reported in quarterly data reports.

Request 15. Include provisions to establish the flow direction quarterly using a network of piezometers and monitor wells.

Response 15. Provisions to determine quarterly the groundwater flow directions are described below.

Request 16. Provide a schedule for well installation, the first quarterly data collection event, and subsequent events.

Response 16. A schedule of well completions and sampling events is provided below.

Request 17. Include provisions to submit the quarterly water quality and groundwater elevation to the Bureau of Waste Cleanup.

Response 17. A schedule of data submittals to the Bureau of Waste Cleanup is provided below.

Additional Information

In addition to the information responding to Ms. Kulakowski's letter, the following is provided to supplement the GWMP.

Rinker Materials Corp. operates the Sweetwater Ready Mix Plant to the northeast and adjacent to the Rinker Portland Cement Corp.'s Cement Mill. The Ready Mix Plant was the subject of a Contamination Assessment Report, dated January 1989, prepared by Jammal & Associates, Inc. A plume of dissolved hydrocarbons resides in the shallow zone on the Plant property. The plume enters the northeast corner of the Rinker Portland Cement Corp. property. The groundwater flow direction, however, indicates that hydrocarbons will tend to migrate to the southeast and not toward the Cement Mill. There are two water wells on the site; these tap the deep-zone (the Biscayne Aquifer), and have no apparent effect on groundwater in the shallow zone. One of these wells (the 10-inch well) continuously pumps about 50 gpm from the deep zone. The other well is used for fire protection. The exact depths of these wells could not be ascertained. The location of the Plant, the two water wells, the groundwater flow direction and the location of the plume are shown in Appendix AE.

As part of the cement manufacturing process, piles of coal, gypsum and slag are stored on site for use in the product. Piezometer 19 was installed among these piles for possible future use in determining the local direction of groundwater flow and whether minerals dissolved from these piles affect groundwater quality. The direction of groundwater flow at Piezometer 19 was determined to be generally north-northeast.

Revised Proposal

The following are proposals regarding well construction, sampling events, analyses, groundwater flow determinations and schedules. These are revisions to the GWMP submitted in January 1991 and pertain only to the application to construct/operate a Soil Thermal Treatment Facility.

Rinker currently operates a soil thermal treatment facility at the Cement Mill. Incoming soils are trucked to the existing soil storage slab indicated on Exhibit A1. This soil storage slab will be used until the proposed soil storage building can be completed. The existing soil storage slab is now covered with a canvass roof to aid in the prevention of runoff until the proposed building is completed.

Under this GWMP, groundwater monitoring will begin in the vicinity of the existing soil storage slab and shift to the new facility upon its completion. Existing Piezometers 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18 and 19 and proposed Well 23 will be monitored while the current facility operates; these are located at the scale house, the existing soil storage slab, the entrance to the Raw Mill, upgradient of the proposed soil storage building, and three intermediate points. Where not presently protected, the wellheads of these piezometers will be sealed and secured against runoff and traffic; the piezometers will be converted to monitor wells. Also, SW3, 7, 8 and 9 will be monitored for water levels. These points exert considerable control over the onsite groundwater-flow direction. The proposed monitoring schedule is as follows:

Phase I

Week of April 15, 1991 - Convert Piezometers 2, 5 through 14, 17, 18 and 19 to permanent monitor wells with the same numbers. Construct Well 23 (monitor well) as an unaffected natural background well. Abandon Piezometers 1, 3, and 4. Piezometer 15, 16, 20, 21 and 22 will be maintained for other purposes.

Phase II

Week of April 22, 1991 - Begin Monitoring as outlined in the following:

Groundwater Levels: Groundwater levels in Wells 6 through 14, 17, 18, 19 and 23 will be measured quarterly and a contour map will be prepared representing the shallow groundwater zone.

Groundwater Quality: Groundwater samples will be collected quarterly from Wells 6 through 14 for analyses by EPA Methods selected from those listed in Chapter 17-775.610 (4)(a), (b), (c) and (d), FAC.

Reporting: A groundwater contour map and the results of analyses will be reported to the FDER within five weeks of the quarterly sampling event and in accordance with Chapter 17-775.610(5), FAC.

Phase III

Before, but within two weeks of completion of the proposed soil storage building, Monitor Wells 24 and 25 will be constructed. The completion of this building is anticipated during late 1991. Following use/operation of the proposed soil storage building, monitoring will continue for two quarters (6 months) as listed under "Phase II" above. Also during that time, Wells 2, 5, 24, and 25 will be incorporated in the monitoring schedule as outlined in "Phase II" above, and will remain on the schedule. After the two quarters cited, Wells 11, 12, 13 and 14 will be deleted from the schedule of sampling/analyses and groundwater level measurement, with the exception of Well 11, which will continue to be monitored quarterly for groundwater levels. A summary of the monitoring schedule and a map showing monitoring points are provided on Exhibits A10 and A11, respectively.

During implementation of the GWMP, wells located on the upgradient side of any of the identified potential source areas will be deleted from the sampling schedule but only upon written notification to and written approval from the FDER. The wells that could be deleted from the schedule will be determined following additional rounds of water-level measurements to amply demonstrate the direction of groundwater flow, but could include Wells 2, 8, 10, 13, 14 and 24.

During the course of implementing the GWMP, three additional wells will be constructed; these will be Wells 23, 24 and 25 as discussed above. These will be constructed with the use of a hollow-stem auger to a total depth of 11 feet and as depicted on Exhibit A11 and in Appendix AB. This construction methodology also was used to construct the piezometers in their subsurface extents. The conversion of the piezometers to monitor wells will include only the rebuilding of wellheads to make them secure and leakproof.

All measurements of groundwater (and surface-water) levels and all groundwater sampling will be completed by Groundwater Specialists, Inc. in accordance with its approved Generic Quality Assurance Plan (Appendix AF). Likewise, analyses will be performed by V.O.C. Analytical, Inc. in accordance with its approved Quality Assurance Plan (Appendix AF).

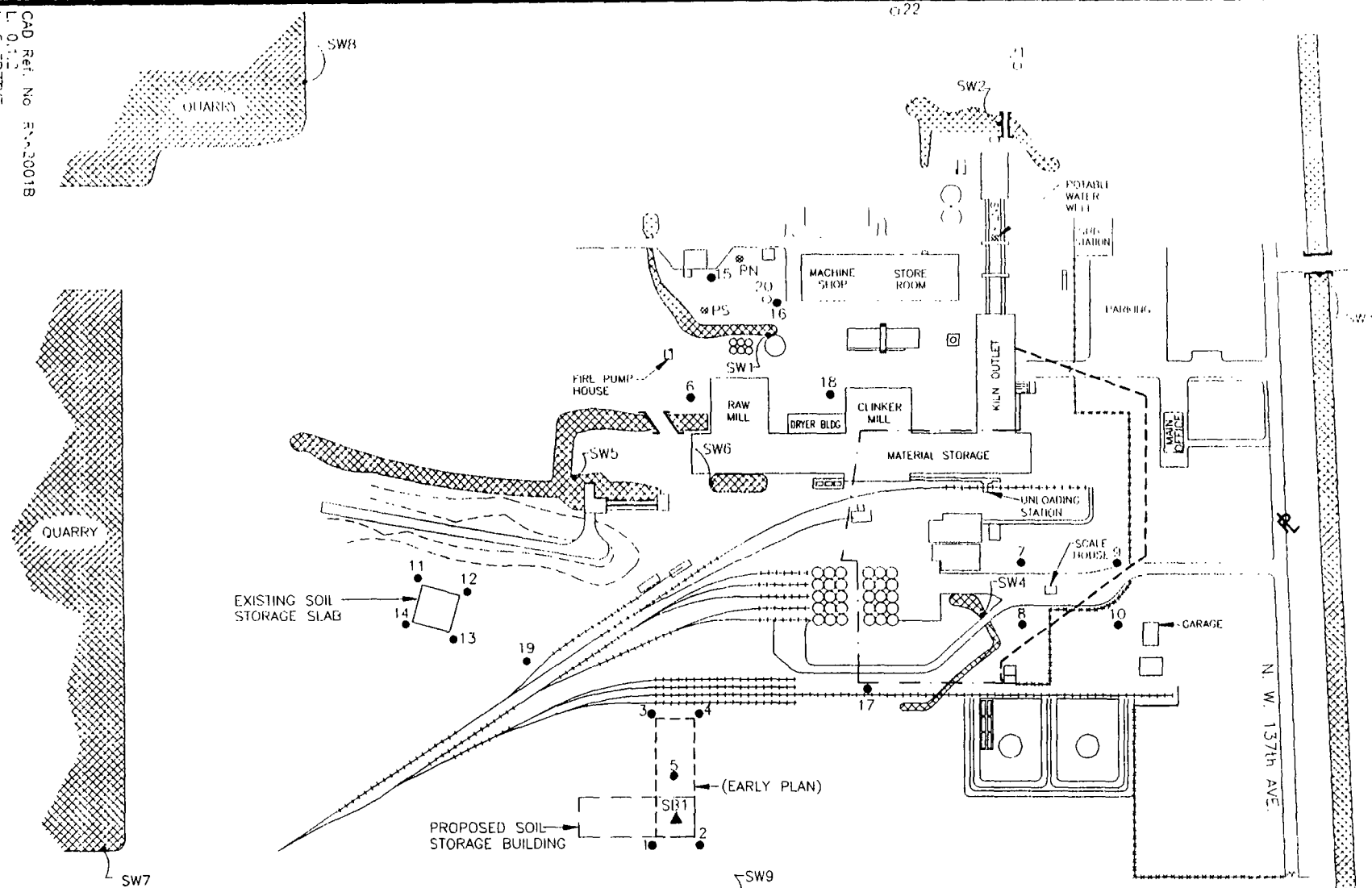
Respectively submitted,
GROUNDWATER SPECIALISTS, INC.

 4.3.91

Paul G. Jakob, P. G.
President

EXHIBITS

CAD Ref: No. R-2001B
 L. 0.1.1
 1.5.22767



LEGEND:

- SW3 SURFACE-WATER MEASURING POINT
- PN PROCESS WELL
- 3 SHALLOW PIEZOMETER
- 5 DEEP PIEZOMETER
- SB1 SOIL BORING

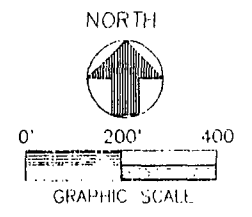


EXHIBIT A2

PIEZOMETER DIMENSIONS, GROUNDWATER AND SURFACE-WATER ELEVATIONS

<u>Piezometer</u>	<u>Total Depth (feet)</u>	<u>Screen Zone (feet)</u>	<u>Top of Casing Elev. (feet)</u>	<u>Depth to Water (feet)</u>	<u>Water Elevation (feet)</u>
1	11.3	3.3-11.3	10.84	7.85	2.99
2	11.5	3.5-11.5	11.02	8.02	3.00
3	9.7	4.7- 9.7	9.86	6.86	3.00
4	11.4	3.4-11.4	10.04	6.85	3.19
5	11.2	3.2-11.2	10.65	7.64	3.01
6	8.0	3.0- 8.0	11.79	8.87	2.92
7	8.0	3.0- 8.0	9.03	6.06	2.97
8	7.9	2.9- 7.9	9.56	6.59	2.97
9	8.0	3.0- 8.0	9.69	6.74	2.95
10	8.0	3.0- 8.0	10.05	7.10	2.95
11	6.6	1.6- 6.6	8.11	5.06	3.05
12	7.0	2.0- 7.0	8.48	5.46	3.02
13	7.0	2.0- 7.0	8.41	5.38	3.03
14	7.0	2.0- 7.0	8.09	5.07	3.02
15	8.0	3.0- 8.0	11.93	9.31	2.62
16	8.0	3.0- 8.0	11.51	8.76	2.75
17	7.2	2.2- 7.2	12.13	9.17	2.96
18	11.0	3.0-11.0	12.43	9.44	2.99
19	8.0	3.0- 8.0	11.28	8.26	3.02
20	28.0	20.0-28.0	11.79	8.87	2.92
21	27.0	17.0-27.0	15.03	12.06	2.97
22	28.0	18.0-28.0	12.85	9.87	2.98

<u>Surface Water Measuring Point</u>	<u>Measuring Point Elevation (feet)</u>	<u>Depth to Water (feet)</u>	<u>Water Elevation (feet)</u>
SW1	9.29	0.13	9.16
SW2	10.11	1.60	8.51
SW3	5.56	2.67	2.89
SW4	9.68	0.87	8.81
SW5	9.20	1.72	7.48
SW6	11.95	1.34	10.61
SW7	9.20	6.03	3.17
SW8	7.39	4.38	3.01
SW9	6.00	2.88	3.12

Notes: The tops of casings range from 0.0 to 3.0 feet above grade. All elevations are referenced to mean sea level. The total depths and screen zones are referenced to grade. All piezometers are constructed of 2-inch diameter PVC. Date of measurements was March 25, 1991.

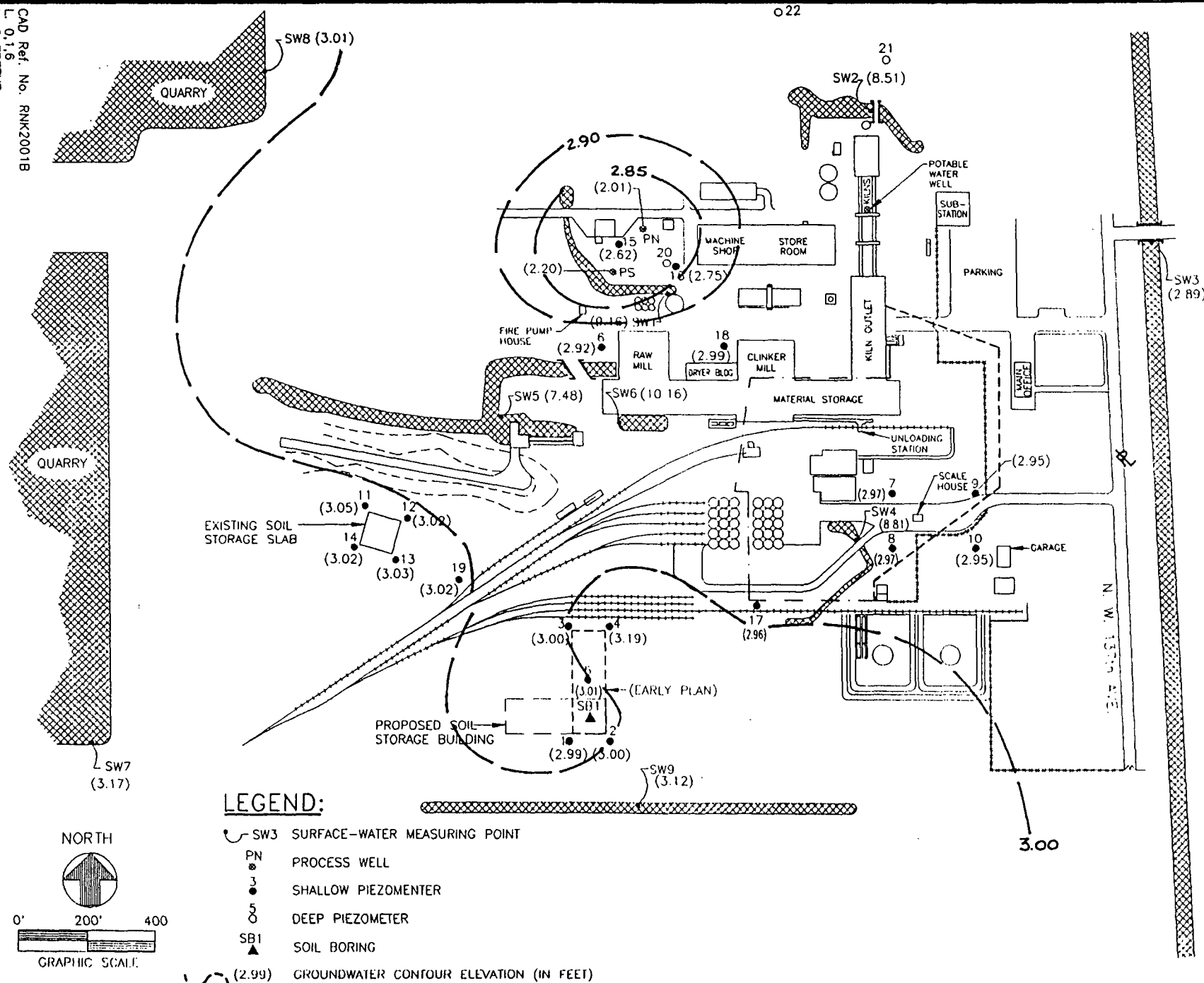
EXHIBIT A3

SURFACE-WATER MEASUREMENT POINTS AND DESCRIPTION OF SURFACE-WATER BODIES

Rinker Portland Cement Corp.

<u>Number</u>	<u>Description</u>
SW1	A soakage pond having a depth of about three feet in its southern reach and seven feet at the northern end. This pond receives about 0.5 million gallons per day of cooling water from the mills.
SW2	A soakage pond having a depth of three to six feet. This pond receives about 0.7 million gallons per day of cooling water from the kilns.
SW3	A regional, unnamed drainage canal, connected to the Tamiami Canal about two miles to the south, canal ranges in depth from three to probably ten feet.
SW4	A shallow soakage ditch, less than one foot in depth. This ditch contains exterior washing of cement dust from the exterior washing of outgoing cement-hauling trucks, not contaminated soils-hauling trucks.
SW5	A soakage pond having a depth from one to six feet. This pond receives about 0.5 million gallons per day of cooling water from the raw mill and crusher.
SW6	A holding pond about two feet deep. This empties to the water body described under SW5.
SW7	A quarry having an area of about 70 acres and a depth of 45 feet. This quarry is hydraulically connected to the water-table zone and the deep zone.
SW8	An active quarry having an area of about 200 acres and a depth of 50 feet. This quarry is hydraulically connected to the water-table zone and the deep zone.
SW9	An isolated canal having a maximum depth of about seven feet. This canal serves a drainage purpose only and by its apparent depth, does not penetrate the dense limestone.

CAD Ref. No. RNK2001B
L. 0,1,6
L. 5 FRZTXYT



LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA

SH

DATE:
MARCH
1991

RINKER PORTLAND
CEMENT CORP.

SHALLOW-ZONE
GROUNDWATER CONTOURS

At

A5

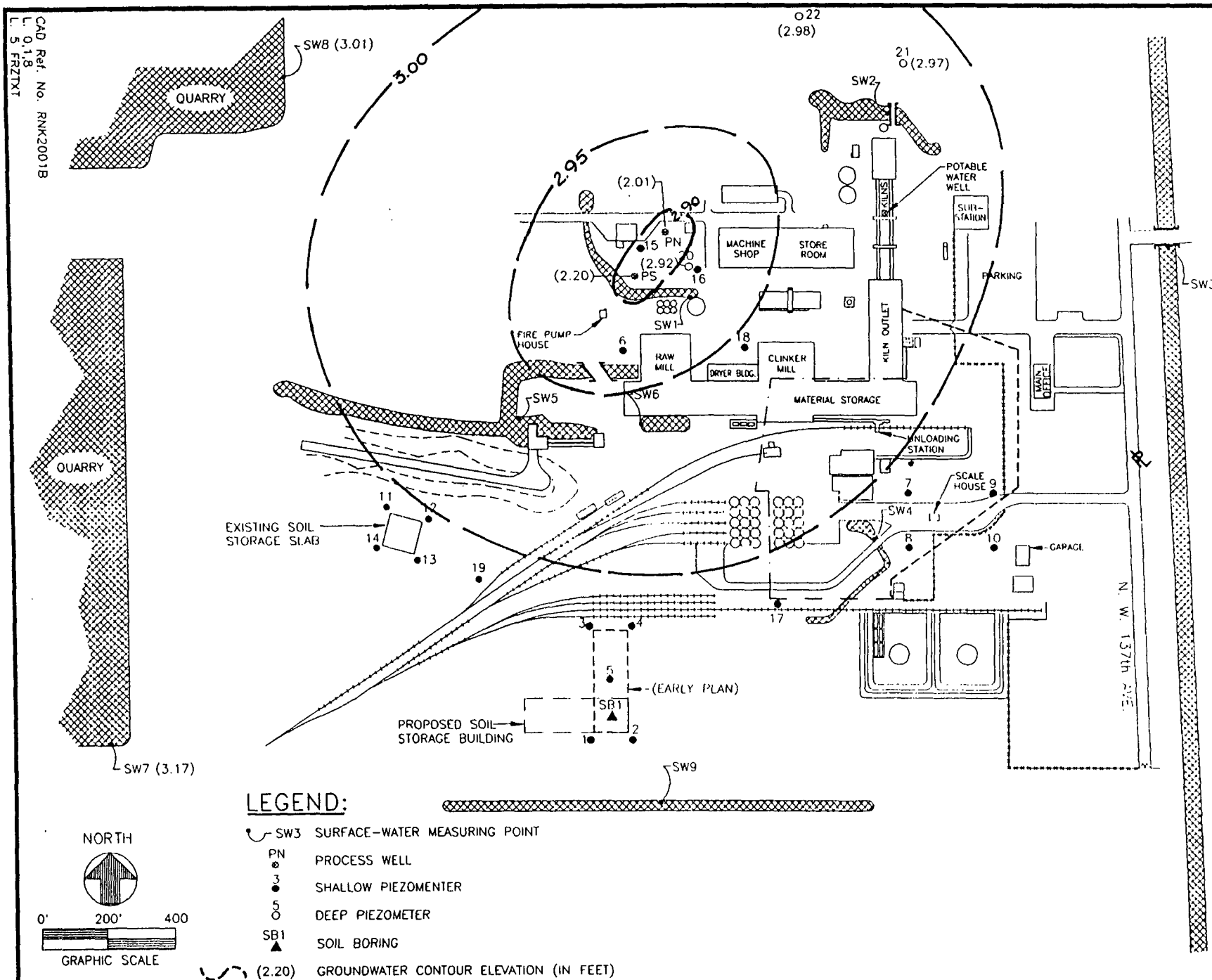


EXHIBIT A6

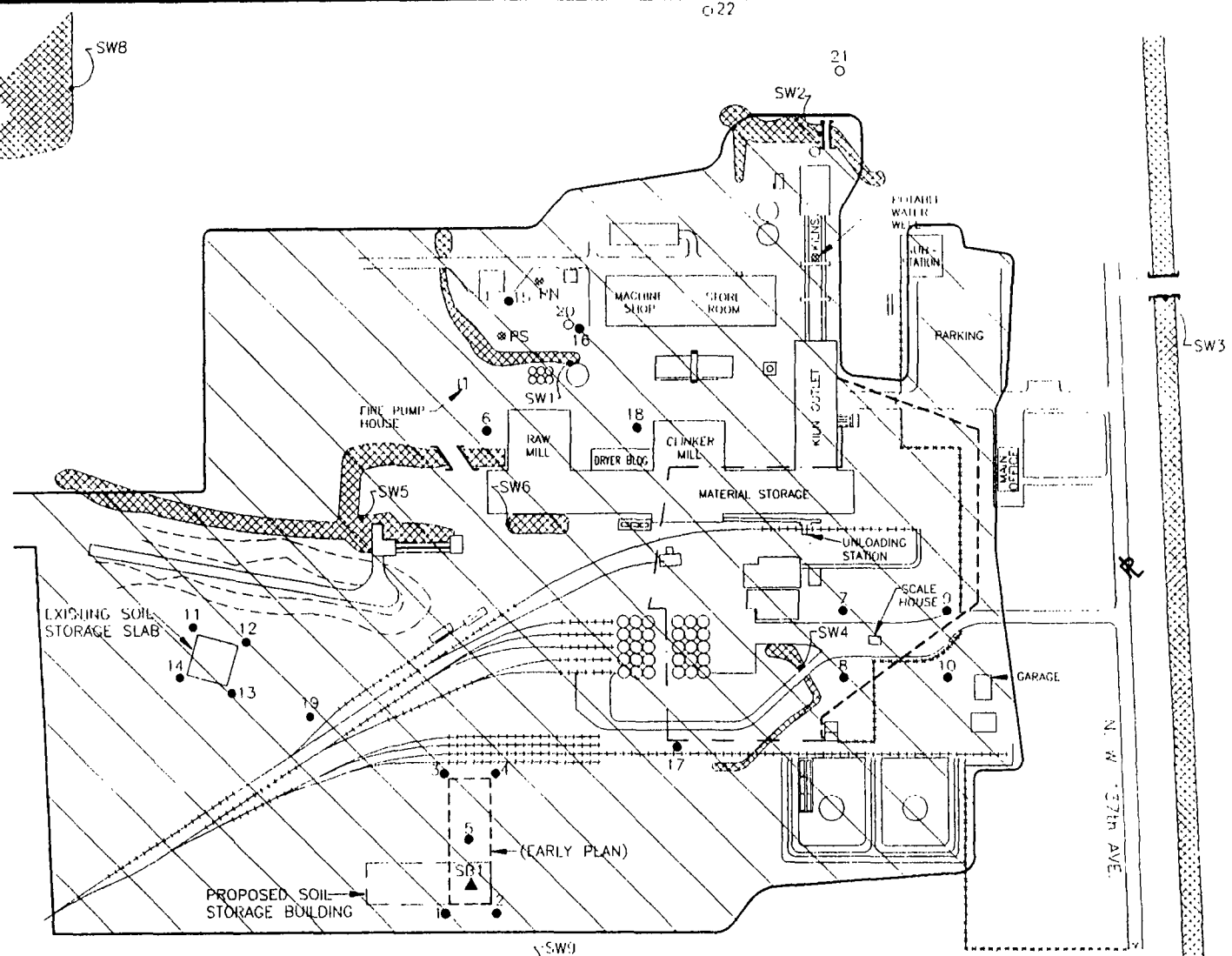
SUMMARY OF ANALYSES - WELL 1

<u>Parameter</u>	<u>Detection limit</u>	<u>Concentration</u>
EPA Method 602 (in ppb)		
benzene	1	BDL
ethylbenzene	1	BDL
toluene	5	BDL
xylene	2	BDL
methyl-tertbutyl ether	5	BDL
EPA Method 610 (in ppb)		
acenaphthene	1	BDL
acenaphthylene	1	BDL
anthracene	1	BDL
benzo(A)anthracene	1	BDL
benzo(A)pyrene	1	BDL
benzo(B)fluoranthene	1	BDL
benzo(G,H,I)perylene	1	BDL
benzo(K)fluoranthene	1	BDL
chrysene	1	BDL
dibenzo(A,H)anthracene	1	BDL
fluoranthene	1	BDL
fluorene	1	BDL
indeno(1,2,3-CD)pyrene	1	BDL
naphthalene	1	BDL
phenanthrene	1	BDL
pyrene	1	BDL
1,methylnaphthalene	1	BDL
2,methylnaphthalene	1	BDL
TOTAL METALS (in ppm)		
arsenic EPA 206.2	0.003	BDL
barium EPA 200.7	0.10	BDL
cadmium EPA 213.2	0.0002	BDL
chromium EPA 200.7	0.01	0.06
lead EPA 239.2	0.002	0.009
mercury EPA 245.2	0.0002	0.0005
selenium EPA 270.2	0.003	BDL
silver EPA 271.2	0.0002	BDL

Note: BDL denotes below detection limit.

LOCATION: 1000 N.W. 37th Ave., MIAMI, FLORIDA

G-22



LEGEND:

- SW3 SURFACE-WATER MEASURING POINT
- PN PROCESS WELL
- 3 SHALLOW PIEZOMETER
- 5 DEEP PIEZOMETER
- SB1 SOIL BORING

- FILLED AREA

NOTE:

THICKNESS OF FILL MATERIALS RANGES FROM 3 TO 6 FEET.



CAD Ref. No. RHP20015
 L 0.1.9
 L 5.FPZTX1

GSI

DATE:
MARCH
1991FOR:
RINKER PORTLAND
CEMENT CORP.

SUBJECT:

STRATIGRAPHIC
CROSS-SECTION

A8

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA

(SOUTH)

(NORTH)

PIEZOMETER
22

GRADE

PIEZOMETER
20

GRADE

SB1

GRADE

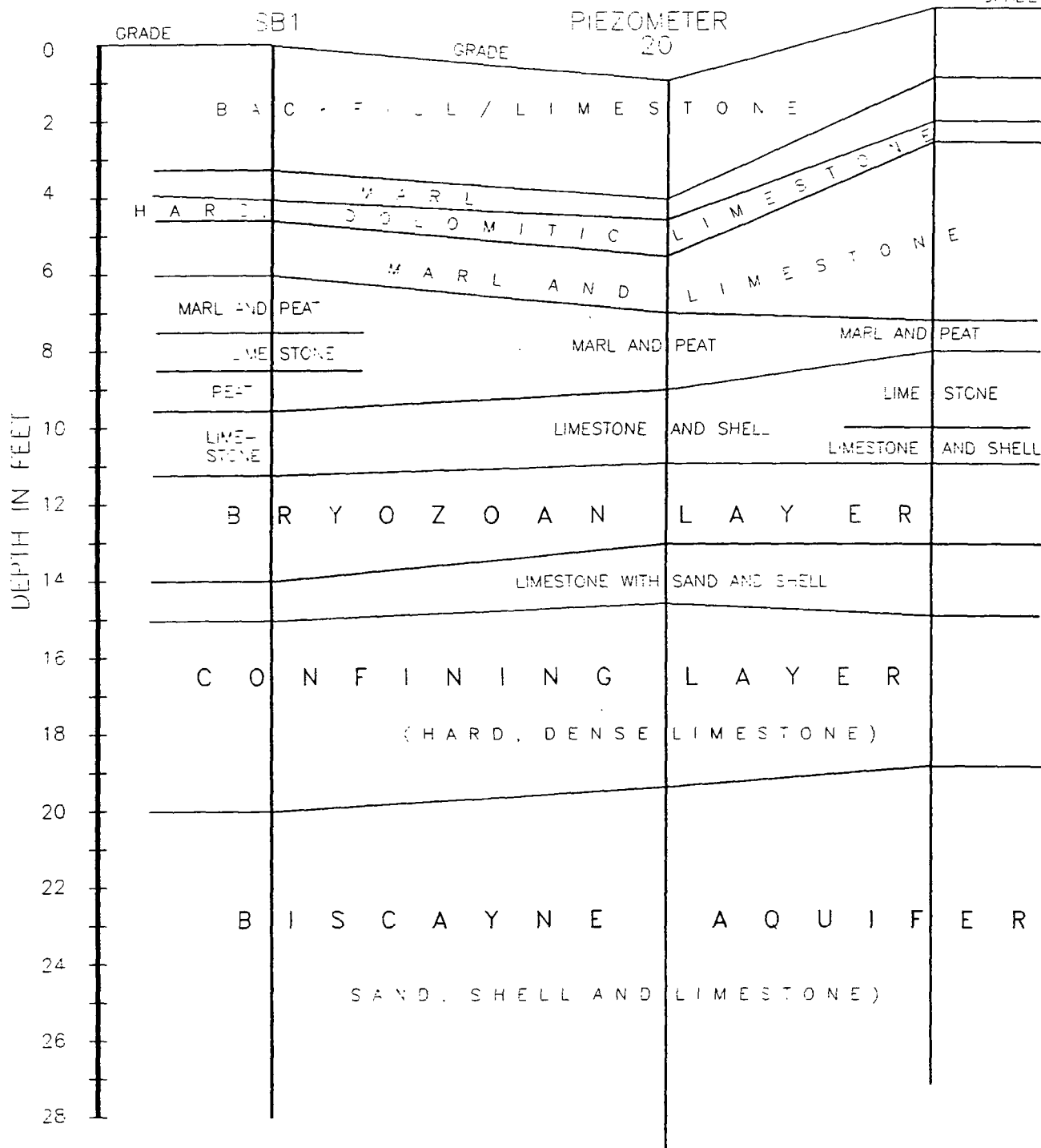


EXHIBIT A9

SUMMARY OF PUMPING/RECOVERY
TEST DATA

<u>Well/Piezometer Number</u>	<u>Distance from Well PN (feet)</u>	<u>Pumping Water Level (feet MSL)</u>	<u>Recovered Water Level (feet MSL)</u>	<u>Maximum Recovery (feet)</u>
PN	0	2.01	2.93	0.92
PS	130	1.98	2.20	0.22
15	73	2.68	2.78	0.10
16	123	2.79	2.87	0.08
20	117	2.91	2.94	0.03

Note: The "pumping/recovery" test was conducted by shutting off Well PN for a period of 0.5 hours and measuring the groundwater level recovery in the wells listed above. Wells PN and PS run continuously at about 694 gpm each to provide process water to the Mill. The 0.5 hour period is about the maximum possible test period because of the demand for water in the Mill. Raw data from the test are provided in Appendix AD.

EXHIBIT A10

SUMMARY OF MONITORING SCHEDULE

Phase II - With Existing Soil Storage Slab

<u>Monitoring Point</u>	<u>Analyses</u>	<u>Water Levels</u>
Well 6	X	X
Well 7	X	X
Well 8	X	X
Well 9	X	X
Well 10	X	X
Well 11	X	X
Well 12	X	X
Well 13	X	X
Well 14	X	X
Well 17		X
Well 18		X
Well 19		X
Well 23		X
SW 3		X
SW 7		X
SW 8		X
SW 9		X

Phase III - Upon Operation of Proposed Soil Storage Building

<u>Monitoring Point</u>	<u>Analyses</u>	<u>Water Levels</u>
Well 2	X	X
Well 5	X	X
Well 6	X	X
Well 7	X	X
Well 8	X	X
Well 9	X	X
Well 10	X	X
Well 11		X
Well 17		X
Well 18		X
Well 19		X
Well 23		X
Well 24	X	X
Well 25	X	X
SW 3		X
SW 7		X
SW 8		X
SW 9		X

Note: The transition from use of the existing to the proposed facilities is described in the text.

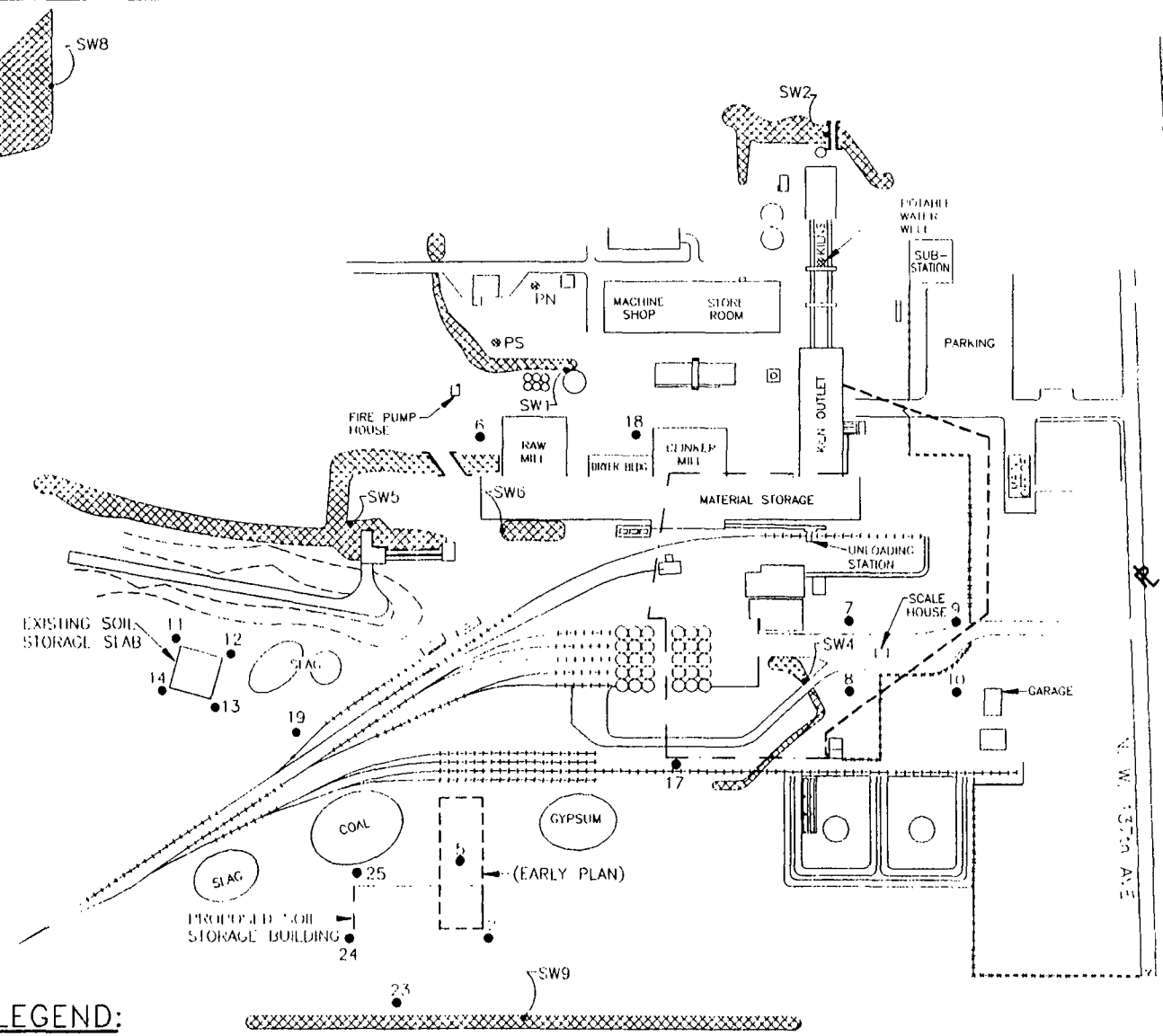
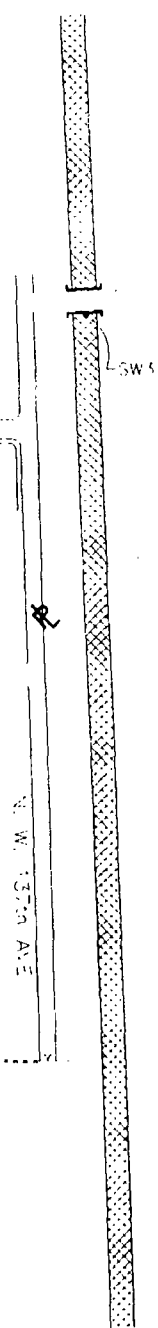
CSI

DATE: MARCH 1991
 FOR: RINKER PORTLAND CEMENT CORP.

SUBJECT: WELLS AND SW POINTS FOR GWMP

EXHIBIT: A11

LOCATION: 1201 N.W. 137th AVE., MIAMI, FLORIDA



LEGEND:

- SW3 SURFACE WATER MEASURING POINT
- PN PROCESS WELL
- 3 MONITOR WELL
- SIAG MATERIALS PILES



CAD Ref. No. RINKGWMP
 L 0,1,2
 L 5 FRZT1

APPENDIX AA

FDER Letter of January 22, 1991



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lexicon Chief, Governor

January 22, 1991

Mr. Michael Vardeman
Rinker Portland Cement Corporation
1200 Northwest 137 Avenue
Miami, Florida 33182

Dear Mr. Vardeman:

The Bureau of Waste Cleanup has reviewed the Ground Water Monitoring Plan (GWMP) dated January 1991 (received January 17, 1992) for your stationary soil thermal treatment facility. We consider this to be a draft document because it was submitted prior to the submission of the NOTICE OF INTENT TO USE THE GENERAL PERMIT TO CONSTRUCT/OPERATE A SOIL THERMAL TREATMENT FACILITY (NOTICE). The following review comments should be addressed before submitting the notice and attachments to meet the requirements of Chapter 17-775.610, F.A.C.

This GWMP has been reviewed for compliance with only Chapter 17-775, F.A.C. While the desire to comply with Chapters 17-775 F.A.C., 17-162, the IW-2 status, and the Dade County Northwest Wellfield Protection Plan requirements via one GWMP is understood, coordinating reviews between the State and local governments would be extremely difficult. Within FDER alone, Chapter 17-775, F.A.C. reviews will be conducted in Tallahassee, Chapter 17-762, F.A.C. reviews will probably be delegated to Dade County and the IW-2 status reviews will be done by the South East Florida District. When resubmitting with the NOTICE, please revise the plan to comply with Chapter 17-775, F.A.C. exclusively.

- 1) Install a sufficient number of piezometers/wells screened in the water table zone only to establish site groundwater flow patterns and to use for selecting monitor well locations. Incorporate surface water features into the elevation network. If the site flow directions are seasonally variable and nonuniform as believed by Dames and Moore, this entire network may also be needed for quarterly water elevation data. Provide construction details for the piezometers/wells.
- 2) Establish background groundwater quality for the GWMP. Any existing chemical data may be used from other permitted sites nearby or the ambient groundwater monitoring network.
- 3) On Figure 2, show all surface water features that are shown on Plate 1 (Dames & Moore 12/9/87) and Exhibit 1. How deep are the little lakes and the canal? Do they breach the dense limestone?



- 4) Identify the locations of well #100, well #200, the fire protection well (Is it at the fire pump house?), and the plant cooling water discharge pipe release point.
- 5) Provide at least three lithologic logs to establish the site stratigraphy.
- 6) Provide well construction details (example: annulus completion), lithologic logs and measured cones of depression for the process water wells.
- 7) Detail every movement and the onsite process of remediating the contaminated soils brought onsite. Address unloading/loading, storage of treated/untreated soils, weighing, and specific locations of all activities.
- 8) Is any response of the water table zone observed in the immediate vicinity of each process water well? Establish whether flow in the water table zone is totally independent of pumping the Biscayne process wells.
- 9) How deep did the trench extend for the underground pipeline and the W.I. pipe? Was the dense limestone unit breached during construction?
- 10) Did Dames & Moore excavate a pit around both process wells during the December 1987 Study? If so, how was well construction integrity restored? Please explain what was meant by "no cascading water into the well pits". Was the pit water elevation compared to the pumping well water elevation?
- 11) Propose an unaffected natural background well. Wells 1, 4, 6 and 7 are too close to potential sources to be used for this purpose.
- 12) Without the site specific flow information, review cannot be completed of the proposed monitor well locations. I concur with the proposed shallow construction (water table zone) for the potential source areas. Since the objective of this GWMP is to detect any discharge to groundwater, the proposed monitor wells will need to be located as close to the unit as possible on the downgradient side. Examples of potential sources are the truck scale, truck unloading pad, the proposed soils storage area(s), the oil line to the kiln (to increase BTUs?), the inlet and outlet and the pressure cleaning facility (to wash out trucks?).
- 13) Identify the specific analytical methods for metals to be used for every sampling event.
- 14) Describe well purging procedures. Will pH, specific conductivity, and temperature be monitored until stabilized to document sufficient purging? Field parameters should be reported with the data.

Michael Vardeman
January 22, 1991
Page Three

- 15) Include provisions to establish the flow direction quarterly using a network of piezometers and monitor wells.
- 16) Provide a schedule for well installation, the first quarterly data collection event, and subsequent events.
- 17) Include provisions to submit the quarterly water quality and groundwater elevation to the Bureau of Waste Cleanup.

If you have any questions concerning this review or the soil thermal treatment rule, please contact me at (904) 488-0190.

Sincerely,

Zoe P. Kulakowski

Zoe P. Kulakowski, P.G.
Technical Review Section
Bureau of Waste Cleanup

ZPK/sr

xc: Paul Wierzbicki, Southeast Florida District

APPENDIX AB
Typical Piezometer Diagrams

GSI

DATE:
MARCH
1991FOR:
RINKER PORTLAND
CEMENT CORP.

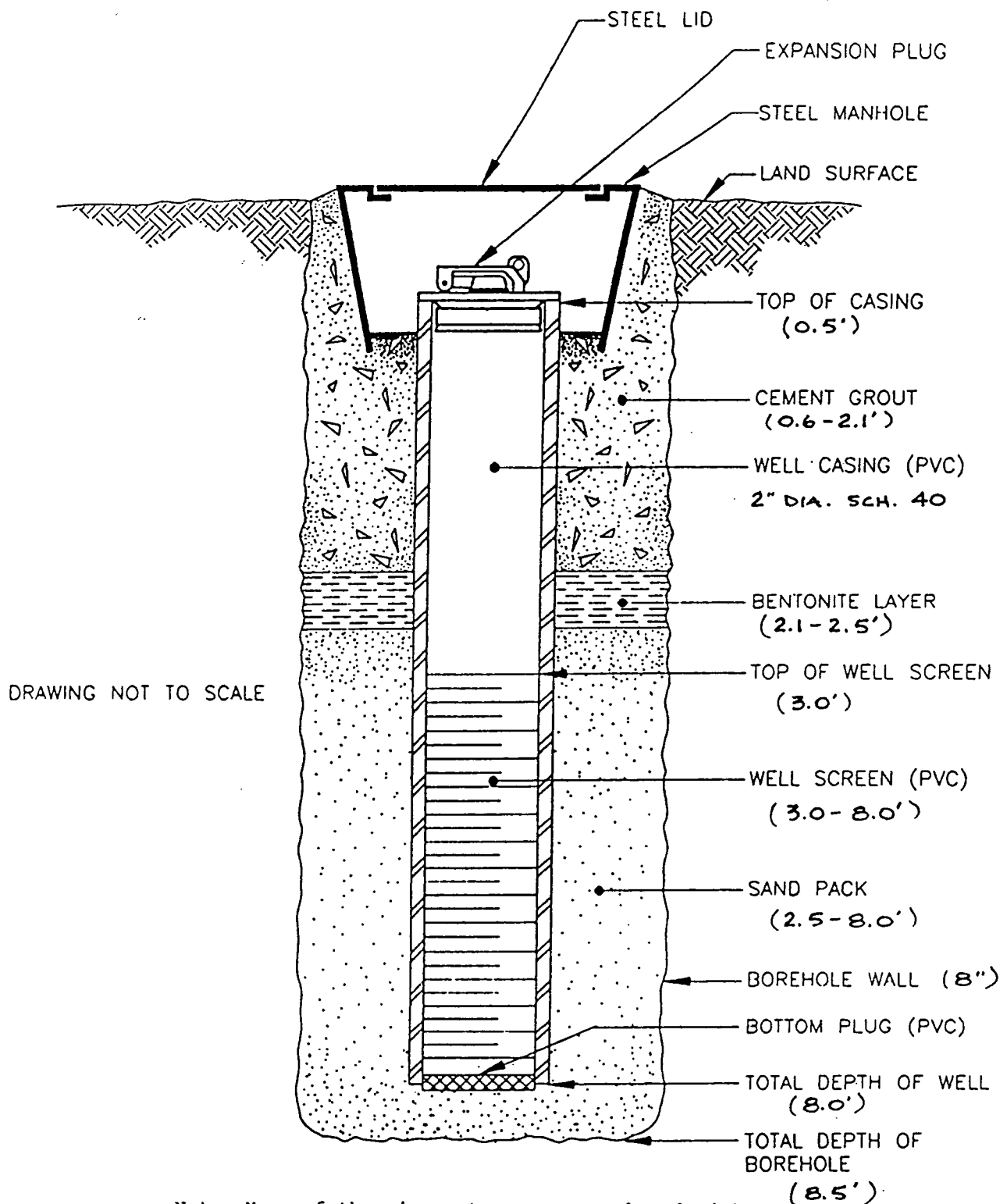
SUBJECT:

TYPICAL SHALLOW-ZONE
PIEZOMETER

AB

LOCATION: 1200 N.W 137th AVE., MIAMI, FLORIDA

FACILITY:



Note: Many of the piezometers are completed with a riser pipe extending above grade. Subsurface portions were completed as shown.

CAD Ref. = GSITMW
L. O. 1
Plotting Scale: 1 = 1

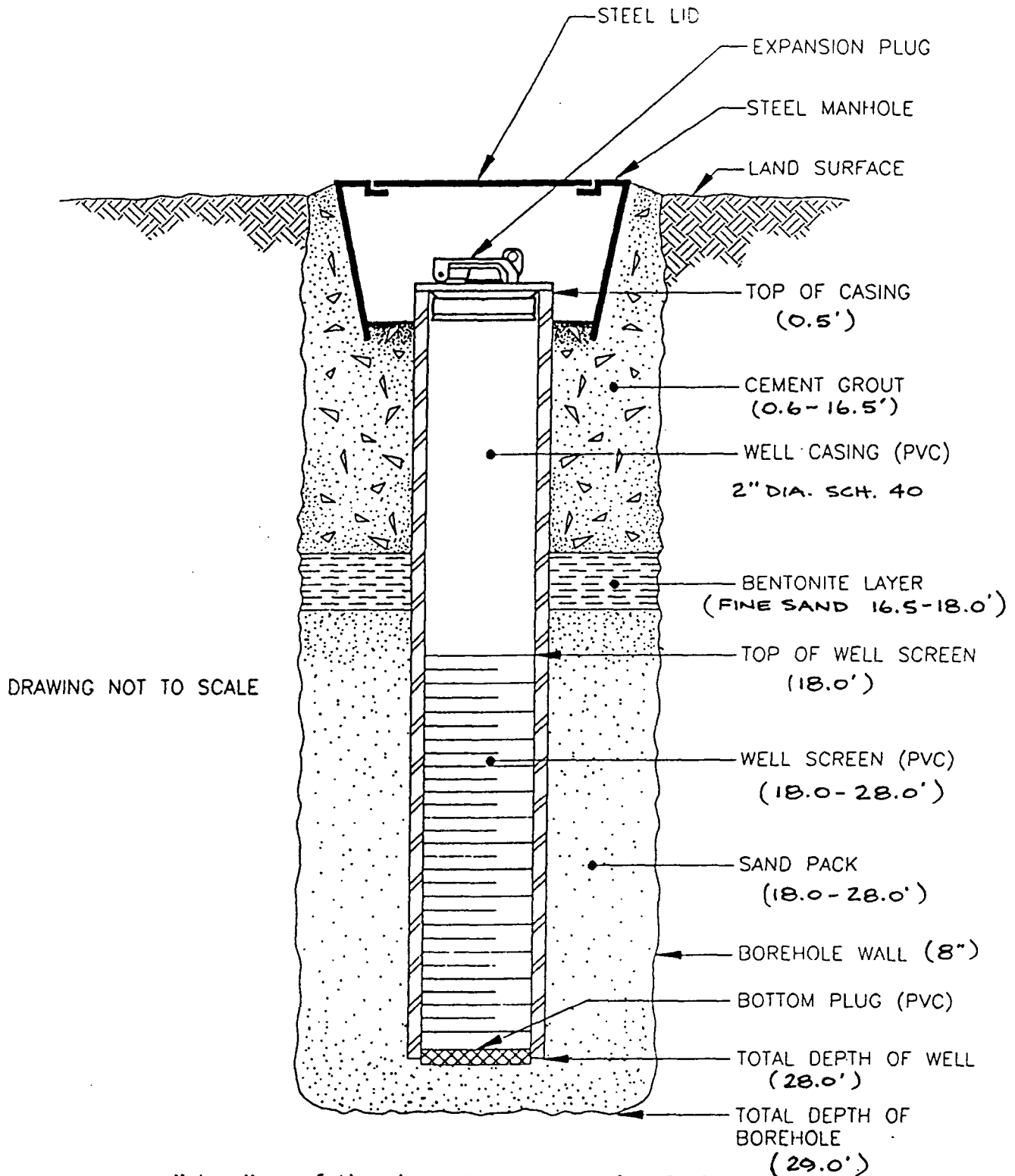
GSI

DATE:
MARCH
1991FOR:
RINKER PORTLAND
CEMENT CORP.SUBJECT:
TYPICAL DEEP-ZONE PIEZOMETER

AB

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA

FACILITY:



Note: Many of the piezometers are completed with a riser pipe extending above grade. Subsurface portions were completed as shown.

CAD Ref. = GSITMW
L 0.1
Plotting Scale: 1 = 1

APPENDIX AC
Reports of Analyses

Note: The concentration of chromium on the analysis that follows (0.06 ppm) may have resulted from the natural background content of the limestone (aquifer). Natural concentrations of chromium in the limestone matrix have been detected near 10 ppm by Rinker's lab and other laboratories in the past. In order to establish the validity of the analysis reported herein, another sample will be drawn from Piezometer 1 during the week of April 15, 1991. The result will be submitted to the FDER within three weeks of sampling.



Analytical Technologies, Inc.

11 EAST OLIVE ROAD

PHONE (904) 474-1001

PENSACOLA, FLORIDA 32514

GROUNDWATER SPECIALIST
3003 SOUTH CONGRESS AVE.
SUITE 1C
PALM SPRINGS FL 33461-0000

Lab I.D.#: 91-2054
Order Number: P41115
Order Date: 03/23/91
Client: 07058
Sampled By: GREG SOUCY
Sample Date: 03/22/91
Sample Time: VARIOUS

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

N/S = Not Submitted

Lab ID	Sample ID	Parameter	Units	Results	Detection Limit
2054-1	38-AC22	SILVER	272.2	PPM	BDL 0.0002
2054-1	38-AC22	ARSENIC	206.2	PPM	BDL 0.003
2054-1	38-AC22	BARIUM	200.7	PPM	BDL 0.10
2054-1	38-AC22	CADMIUM	213.2	PPM	BDL 0.0002
2054-1	38-AC22	CHROMIUM	200.7	PPM	0.06 0.01
2054-1	38-AC22	MERCURY	245.2	PPM	0.0005 0.0002
2054-1	38-AC22	LEAD	239.2	PPM	0.009 0.002
2054-1	38-AC22	SELENIUM	270.2	PPM	BDL 0.003

Comments: PPM = Parts Per Million, mg/l. PPB = Parts Per Billion, ug/l.
Method References: EPA 600/4-79-020, Revised March 1983 and Federal
Register 40 CFR Part 136, July 1, 1988. BDL = Below Detection Limits.

page 1 Approved By : Susan L. Linder



Client: GROUNDWATER SPECIALIST

Lab I.D.#: 91-2054-1

Project Number: RNK2002

Order Date: 03/23/91

Project Name: RINKER CEMENT MILL

Sampled By: GREG SOUCY

Sample Site: MIAMI, FL

Sample Type: GROUNDWATER

Sample ID.: 38-AC22

Sample Date: 03/22/91

Time: VARIOUS

BETX+MTBE

BETX + MTBE

Parameter	Units	Result	Detection Limit
BENZENE	PPB	BDL	1
ETHYL BENZENE	PPB	BDL	1
METHYL TERT-BUTYL ETHER	PPB	BDL	5
TOLUENE	PPB	BDL	5
XYLENE	PPB	BDL	2
TRIF-TOLUENE *SURR* LIMITS (70-130)	% REC	113	



Analytical Technologies, Inc.

11 EAST OLIVE ROAD

PHONE (904) 474-1001

PENSACOLA, FLORIDA 32514

Client: GROUNDWATER SPECIALIST

Lab I.D.#: 91-2054-2

Project Number: RNK2002

Order Date: 03/23/91

Project Name: RINKER CEMENT MILL

Sampled By: GREG SOUCY

Sample Site: MIAMI, FL

Sample Type: GROUNDWATER

Sample ID.: 38-RC22

Sample Date: 03/22/91

Time: VARIOUS

BETX+MTBE

BETX + MTBE

Parameter	Units	Result	Detection Limit
BENZENE	PPB	BDL	1
ETHYL BENZENE	PPB	BDL	1
METHYL TERT-BUTYL ETHER	PPB	BDL	5
TOLUENE	PPB	BDL	5
XYLENE	PPB	BDL	2
TRIF-TOLUENE *SURR* LIMITS (70-130)	% REC	108	



Client: GROUNDWATER SPECIALIST

Lab I.D.#: 91-2054-1

Project Number: RNK2002

Order Date: 03/23/91

Project Name: RINKER CEMENT MILL

Sampled By: GREG SOUCY

Sample Site: MIAMI, FL

Sample Type: GROUNDWATER

Sample ID.: 38-AC22

Sample Date: 03/22/91

Time: VARIOUS

1770/BASE/610

1770/BASE NEUTRALS/610

Parameter	Units	Result	Detection Limit
ACENAPHTHENE	PPB	BDL	1
ACENAPHTHYLENE	PPB	BDL	1
ANTHRACENE	PPB	BDL	1
BENZO(A)ANTHRACENE	PPB	BDL	1
BENZO(A)PYRENE	PPB	BDL	1
BENZO(B)FLUORANTHENE	PPB	BDL	1
BENZO(GHI)PERYLENE	PPB	BDL	1
BENZO(K)FLUORANTHENE	PPB	BDL	1
CHRYSENE	PPB	BDL	1
DIBENZO(A,H)ANTHRACENE	PPB	BDL	1
FLUORANTHENE	PPB	BDL	1
FLUORENE	PPB	BDL	1
INDENO(1,2,3-CD)PYRENE	PPB	BDL	1
NAPHTHALENE	PPB	BDL	1
PHENANTHRENE	PPB	BDL	1
PYRENE	PPB	BDL	1
1,METHYLNAPHTHALENE	PPB	BDL	1
2,METHYLNAPHTHALENE	PPB	BDL	1

APPENDIX AD
Results of Aquifer Tests

RESULTS OF PUMPING/RECOVERY TEST AND SLUG TESTS

On March 26, 1991, a 0.5 hour shut-down of Well PN (northern of two process wells) was effected. Water levels in Wells PN, PS, and Piezometers (also called wells) 15, 16 and 20 were measured during recovery and then drawdown as Well PN was restarted. Wells PN and PS pump 694 gpm each, on a continuous basis. A plan showing the well locations is included on page ADA in this appendix. An analysis of the data and conclusions on aquifer characteristics follow.

Time-recovery data from Wells PN, 15, 16 and 20 are shown on page ADB; plots are shown on page ADC. Based on recoveries measured in Wells 15 and 16 (shallow) and Well 20 (deep), it is clear that the shallow and deep zones are affected by pumping/recovery of Well PN (and PS). A cross section showing the depths of penetration of these wells is included on page ADD (Well PS is identical to Well PN). This diagram shows Wells 15, 16 and 20 as if they were in the same direction from Well PN. Well PN is shown to penetrate about six feet of saturated shallow zone and less than two feet of the deep zone. As determined during the construction of Well 20, about four feet of the saturated shallow zone (between depths of 10 and 14 feet) consists of the bryozoan layer and sandy, shelly limestone of the Miami formation; this lies immediately above the hard, dense limestone confining bed, and is known to be a permeable horizon.

Using the recovery data from the test, the total transmissivity of both zones was determined, then the transmissivity of each zone was estimated. The total transmissivity was determined using the Theis Equation (Walton, 1970, Groundwater Resource Evaluation, McGraw Hill), where:

- (1) $s = 114.6 \text{ } QW(u)/T$ and
- (2) $u = 1.87 \text{ } rrS/Tt$

The known (or estimated) parameters are:

s = drawdown/recovery (at $t=25$ minutes) = 0.92 feet
 Q = total pumping rate yielding the recovery = 694 gpm
 r = well radius, taken to be 10 feet
 S = storage coefficient = 0.20
 t = time of recovery = 0.0173 days = 25 minutes

The unknown parameters are T , $W(u)$ and u . The two equations (1 and 2) were subtracted to eliminate T and the unique points in the well function where $W(u)$ and u fit the equation were determined. The results were:

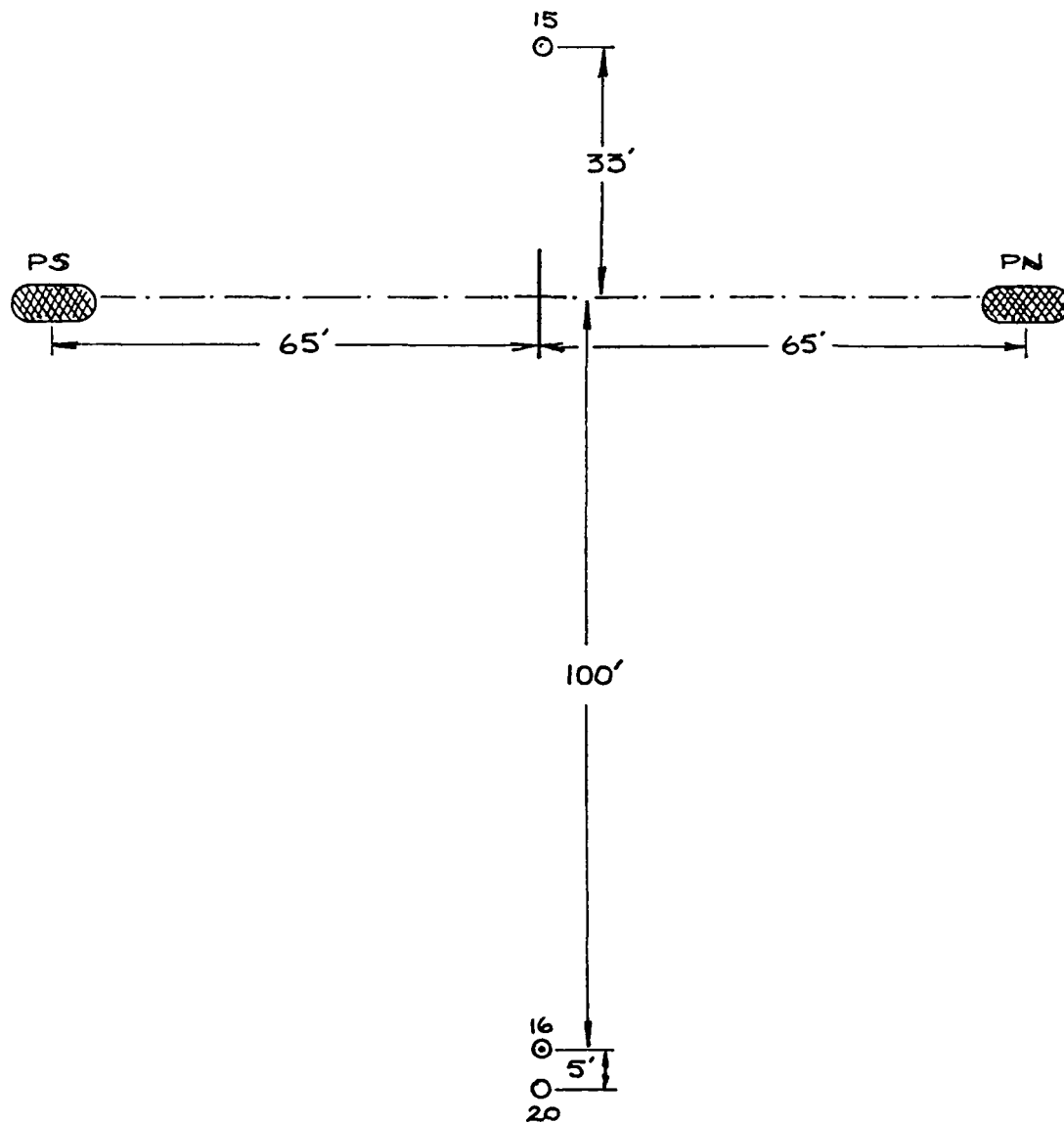
$W(u) = 7.41$
 $u = 3.4 \times 10^{-4}$

T was then solved to be 646,000 gpd/ft. This figure matches well with that reported by Dames and Moore in the GWMP of January, 1991. The transmissivity of the shallow and deep zones were then estimated on the basis of the time-recovery drawdowns. At the end of 30 minutes of recovery, the total recoveries in Wells 16 and 20 (equidistant from Well PN) were 0.080 and 0.027 feet. As the transmissivity of each zone is inversely proportional to the drawdown, and transmissivities are additive, the ratio of the shallow zone transmissivity to the total transmissivity is $0.027/(0.027+0.080)$, or 0.252. Thus the transmissivity of the shallow zone is estimated to be 163,000 gpd/ft and that of the deep zone is 483,000 gpd/ft. These estimates are quite reasonable in light of the small penetration of the deep zone by Well PN and the known high permeability of the bryozoan layer of the shallow zone in more eastern parts of Dade County. The relative flatness of the shallow water levels also indicates the relatively high permeability of the bryozoan layer.

In addition to the test conducted on Well PN, six slug tests were conducted on shallow piezometers. The results of four of the tests are shown on pages ADE through ADL. The tests yielding the highest and lowest hydraulic conductivities were rejected as anomalous. The average of the hydraulic conductivities determined was 12.5 gpd/sq.ft. The average transmissivity determined was 87.5 gpd/ft. These values are very much lower than determined during the recovery test of Well PN because the piezometers tap only the sediments above the bryozoan facies where the hydraulic conductivity is much lower than the bryozoan layer. Thus, the shallow zone is subdivided into two hydraulic units, one of very low permeability above a depth of about 10 feet and another of high permeability approximately between 10 and 14 feet in depth in the area of Piezometer 20.

It is evident from the shallow groundwater levels and surface-water levels that the cooling water ponds have little effect on groundwater levels. Water seeped from these ponds is theorized to enter the bryozoan layer and then flow laterally to the process wells and/or the canal on the east of the property. Because of the high permeability of the bryozoan layer, water entering this layer would not show a significant mounding effect.

LOCATIONS OF WELLS USED IN RECOVERY TEST



LEGEND:

- SHALLOW-ZONE PIEZOMETER
- DEEP-ZONE PIEZOMETER
- ▨ PROCESS WELL



PROJECT RINKER 2002 PUMPING WELL

DATE _____ PAGE 1 OF 2

3-26-91

[illegible]

GSI

PUMPING TEST FORM — HYDROCARBON CA PROJECTS

PROJECT RNK 2002

PUMPING WELL PS

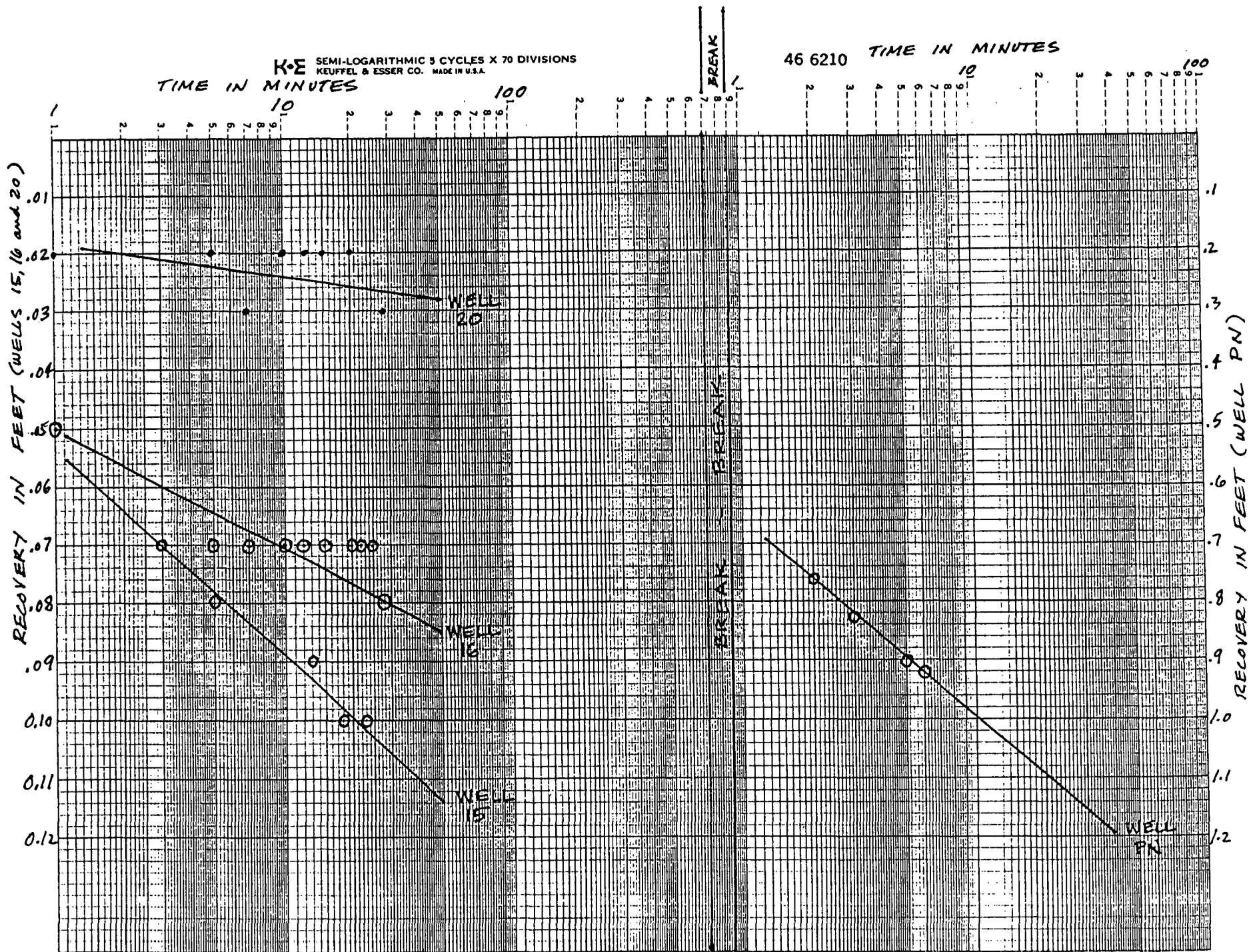
DATE _____

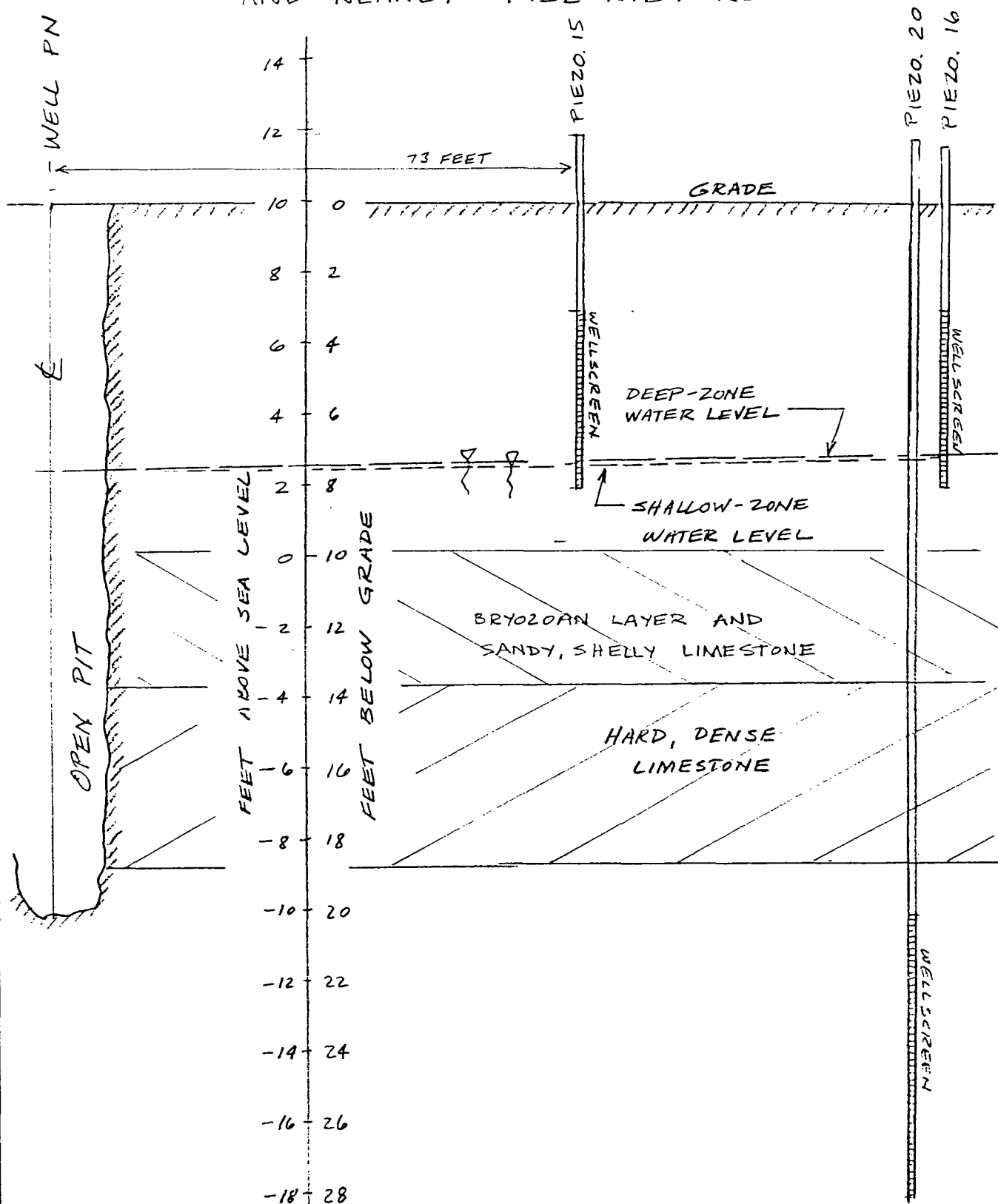
PAGE 2 OF 2

MEASURED w/"M" SCOPE

3.26.91

WELL NUMBER 20 (T) (DEEP)						WELL NUMBER 16 (P) (SHALLOW)					
TIME	HELD	WET	DTW	S	Q AND COMMENTS	TIME	HELD	WET	DTW	S	Q AND COMMENTS
0741			8.88		BACKGROUND W.L. \pm	0741			8.72		BACKGROUND W.L. \pm
745			8.88		" "	0745			8.71		" "
0800					START TEST \rightarrow PN TURNED OFF	0800					START TEST
801			8.86	0.02		801			8.67	0.05	
805			8.86	0.02		805			8.65	.07	
807			8.85	0.03	RECOVERY	807			8.65	.07	RECOVERY
810			8.85	0.02		810			8.65	.07	
8:12:30			8.86	0.02		8:12:30			8.65	.07	
815			8.86	0.02		815			8.65	.07	
820			8.86	0.02		820			8.65	.07	
822:30			8.86	0.02		8:22:30			8.65	.07	
825			8.86	0.02		825			8.65	.07	
828			8.85	0.03		828			8.64	.08	
830					PUMP "PN" TURNED BACK ON	830					PN TURNED ON
831			8.87	0.01		831			8.68	.04	
835			8.87	0.01		835			8.88	.04	
840			8.87	0.01	DRAWDOWN	840			8.69	.03	DRAWDOWN
845			8.87	0.01		845			8.69	.03	
850			8.88	0		850			8.71	.01	
855			8.88	0		855			8.72	0	
900 AM			8.88	0		900			8.72	0	
TEST COMPLETED						TEST COMPLETED					
<p>NOTE: LINEAR DISTANCES MEASURED BETWEEN THE NORTH PROCESS WELL (PN) AND THE PIEZOMETERS USED IN THE PUMP TEST:</p> <p>PN to #15 \approx 73'</p> <p>PN to #16 \approx 123'</p> <p>PN to #20 \approx 119'</p>											



CROSS SECTION SHOWING PUMPING WELL PN
AND NEARBY PIEZOMETERS

NOTE: THIS CROSS SECTION SHOWS THE RELATIONSHIP AMONG WATER LEVELS IN THE SHALLOW AND DEEP ZONES, THE HARD, DENSE LIMESTONE, AND WELL PN - THE OPEN PIT. WATER LEVELS REFLECT PUMPING.

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "R" (#18) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

D	=	2	=	well diameter (inches)
BH	=	8	=	borehole diameter (inches)
RI	=	0.08	=	radius of well (feet)
Rc	=	0.20833	=	radius of well section where water level is rising (feet)
Re	=		=	effective radial distance over which head difference (y) is dissipated (feet)
Rw	=	0.33	=	borehole radius (feet)
Le	=	7.20	=	length of saturated screen (feet)
yo	=	12.00	=	y intercept at time 0 (feet)
yt	=	0.62	=	y intercept at time t (feet)
t	=	605.00	=	time in seconds after start of test (seconds)
H	=	7.00	=	saturated thickness of aquifer (feet)
Lw	=	6.20	=	length from water table to bottom of wellscreen (feet)
A	=	2.00	=	dimensionless coefficient
B	=	0.60	=	dimensionless coefficient
C	=	1.40	=	dimensionless coefficient

EQUATIONS:

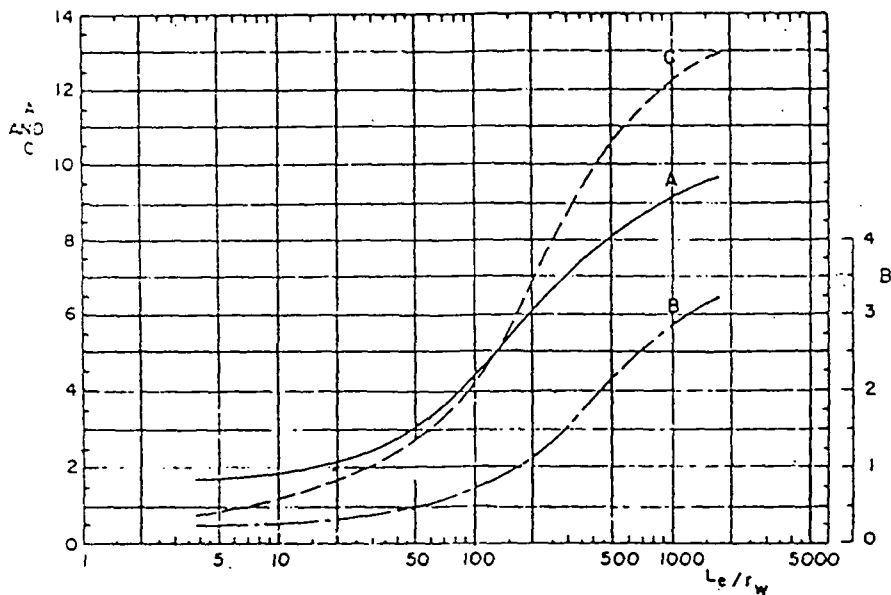
$$\ln(Re/Rw) = \frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

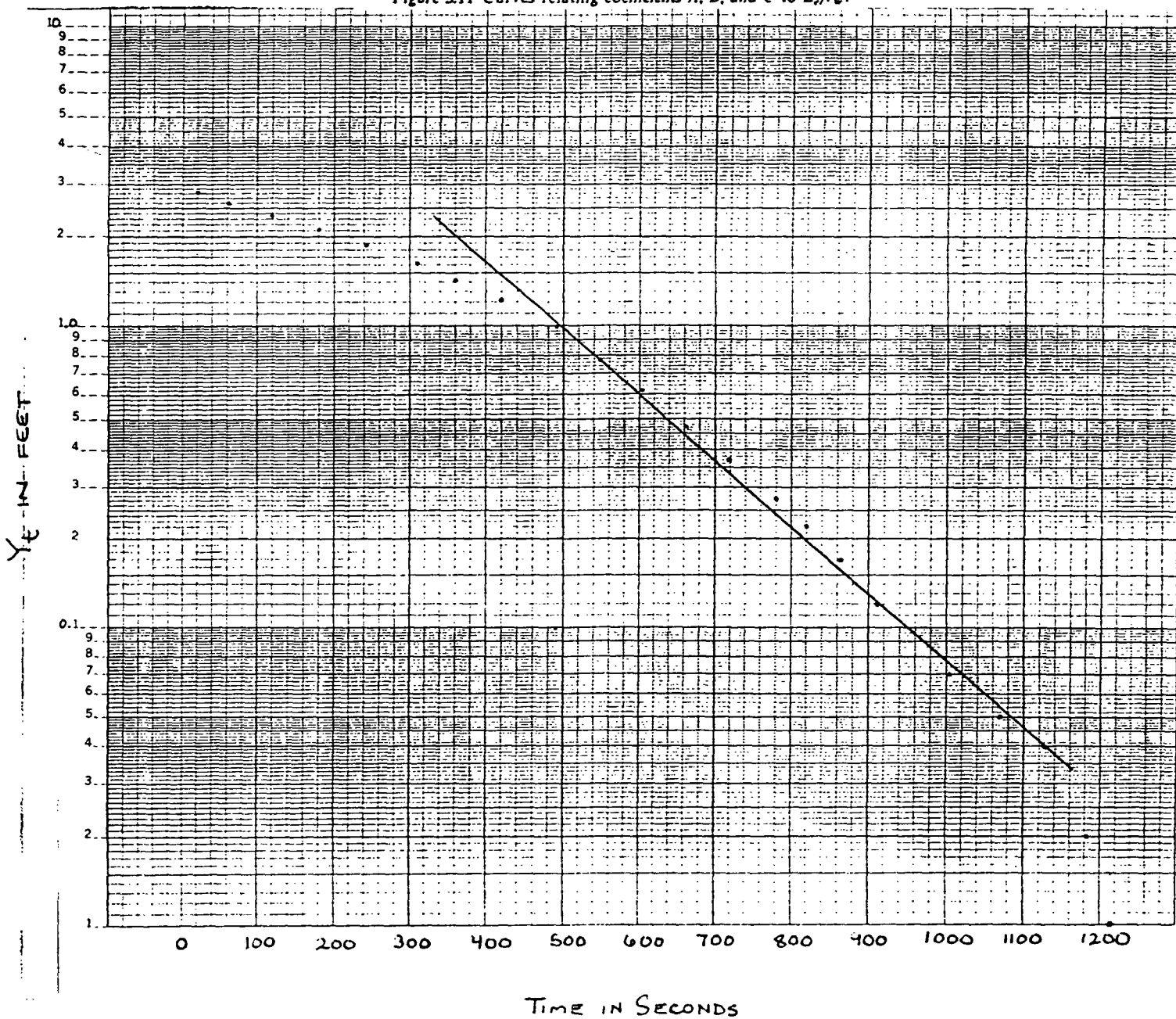
Le/Rw	=	21.6
Lw/Rw	=	18.6
H-Lw	=	0.80
Rc * Rc	=	0.043
2 * Le	=	14.4
1/t	=	0.002
ln(yo/yt)	=	3.0
ln(Re/Rw)	=	2.0
ln[(H-Lw)/Rw]	=	0.8 (if >6, then 6 is used in equation)

K	=	0.00003	=	hydraulic conductivity (ft/second)
K	=	19	=	hydraulic conductivity (gpd/sq ft)
T	=	135	=	transmissivity (gpd/ft)



WELL 18

Figure 5.11 Curves relating coefficients A, B, and C to L_e/r_w .



SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "F" (#6) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

D	=	2	=	well diameter (inches)
BH	=	8	=	borehole diameter (inches)
Ri	=	0.08	=	radius of well (feet)
Rc	=	0.20833	=	radius of well section where water level is rising (feet)
Re	=		=	effective radial distance over which head difference (y) is dissipated (feet)
Rw	=	0.33	=	borehole radius (feet)
Le	=	2.80	=	length of saturated screen (feet)
yo	=	1.05	=	y intercept at time 0 (feet)
yt	=	0.60	=	y intercept at time t (feet)
t	=	180.00	=	time in seconds after start of test (seconds)
H	=	7.00	=	saturated thickness of aquifer (feet)
Lw	=	2.80	=	length from water table to bottom of wellscreen (feet)
A	=	1.80	=	dimensionless coefficient
B	=	0.50	=	dimensionless coefficient
C	=	0.80	=	dimensionless coefficient

EQUATIONS:

$$\ln(Re/Rw) = \frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

Le/Rw	=	8.4
Lw/Rw	=	8.4
H-Lw	=	4.20
Rc * Rc	=	0.043
2 * Le	=	5.6
1/t	=	0.006
ln(yo/yt)	=	0.6
ln(Re/Rw)	=	1.1
ln[(H-Lw)/Rw]	=	2.5 (if >6, then 6 is used in equation)

K	=	0.00003	=	hydraulic conductivity (ft/second)
K	=	18	=	hydraulic conductivity (gpd/sq ft)
T	=	124	=	transmissivity (gpd/ft)

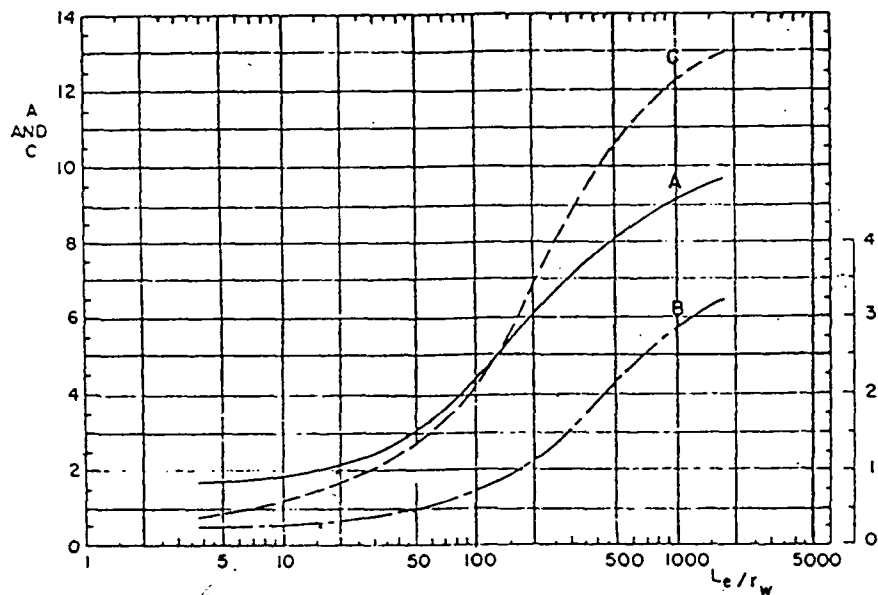
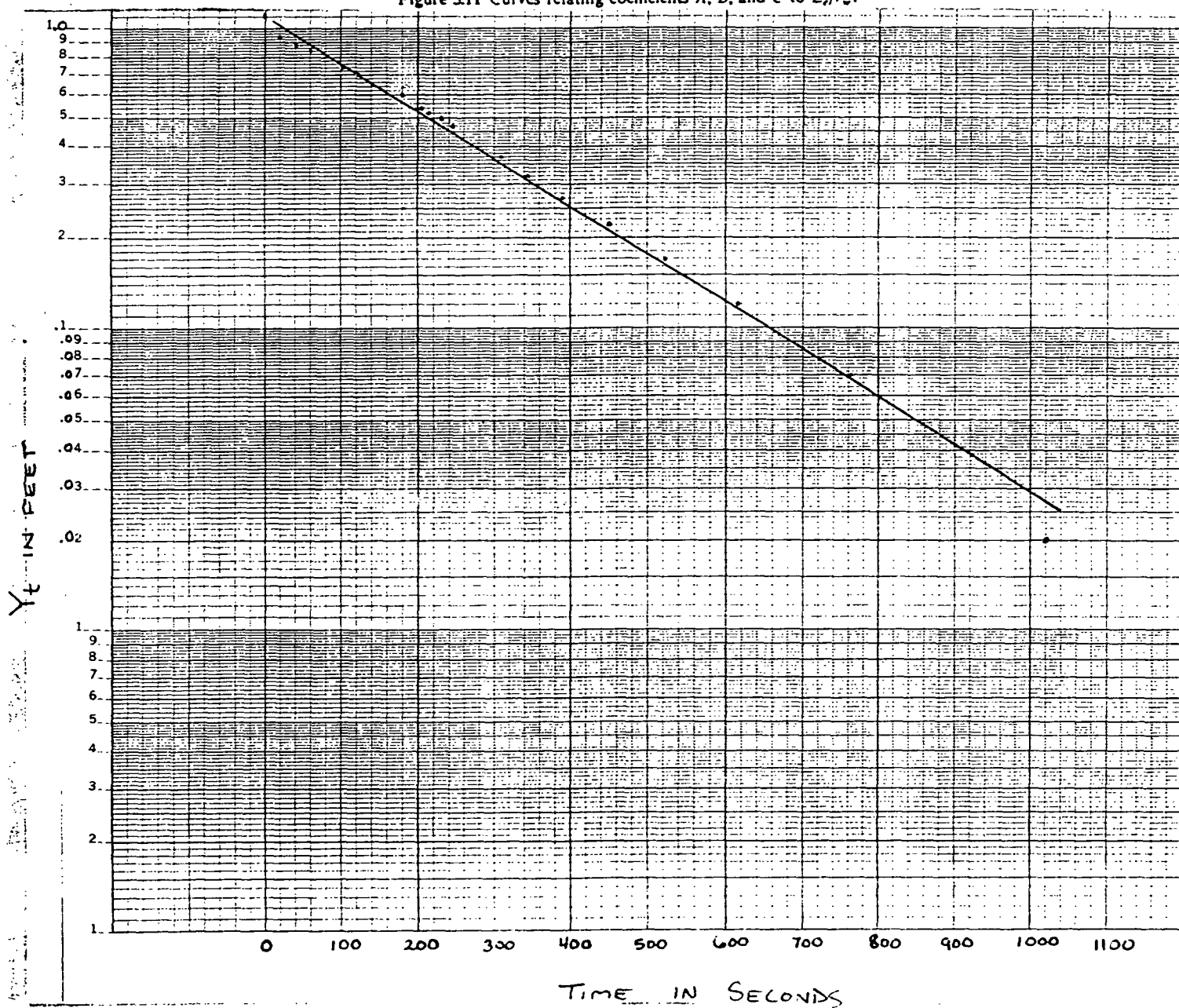


Figure 5.11 Curves relating coefficients A, B, and C to L_e/r_w .



SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "Q" (#17) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

D	=	2	=	well diameter (inches)
BH	=	8	=	borehole diameter (inches)
RI	=	0.08	=	radius of well (feet)
Rc	=	0.20833	=	radius of well section where water level is rising (feet)
Re	=		=	effective radial distance over which head difference (y) is dissipated (feet)
Rw	=	0.33	=	borehole radius (feet)
Le	=	2.80	=	length of saturated screen (feet)
yo	=	2.21	=	y intercept at time 0 (feet)
yt	=	2.00	=	y intercept at time t (feet)
t	=	100.00	=	time in seconds after start of test (seconds)
H	=	9.20	=	saturated thickness of aquifer (feet)
Lw	=	2.80	=	length from water table to bottom of wellscreen (feet)
A	=	1.80	=	dimensionless coefficient
B	=	0.50	=	dimensionless coefficient
C	=	1.00	=	dimensionless coefficient

EQUATIONS:

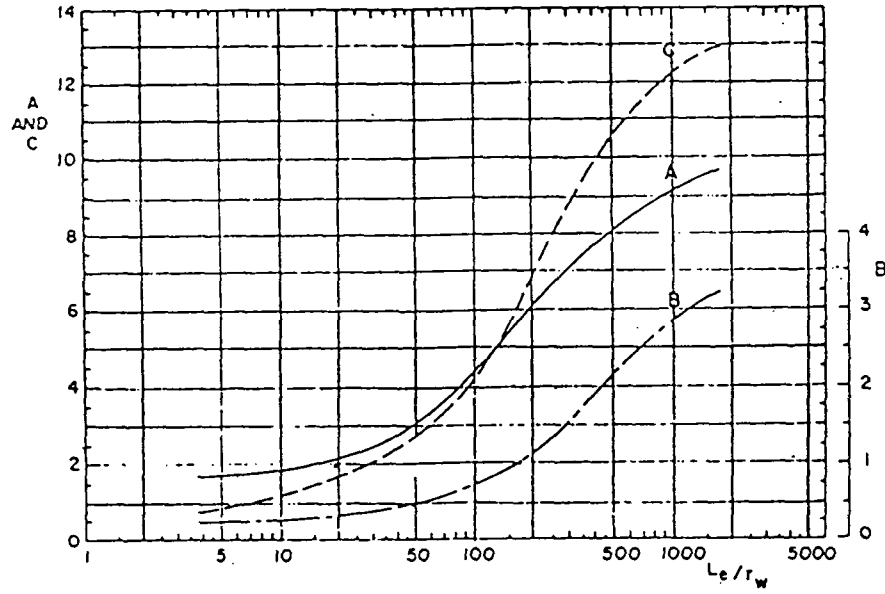
$$\ln(Re/Rw) = \frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

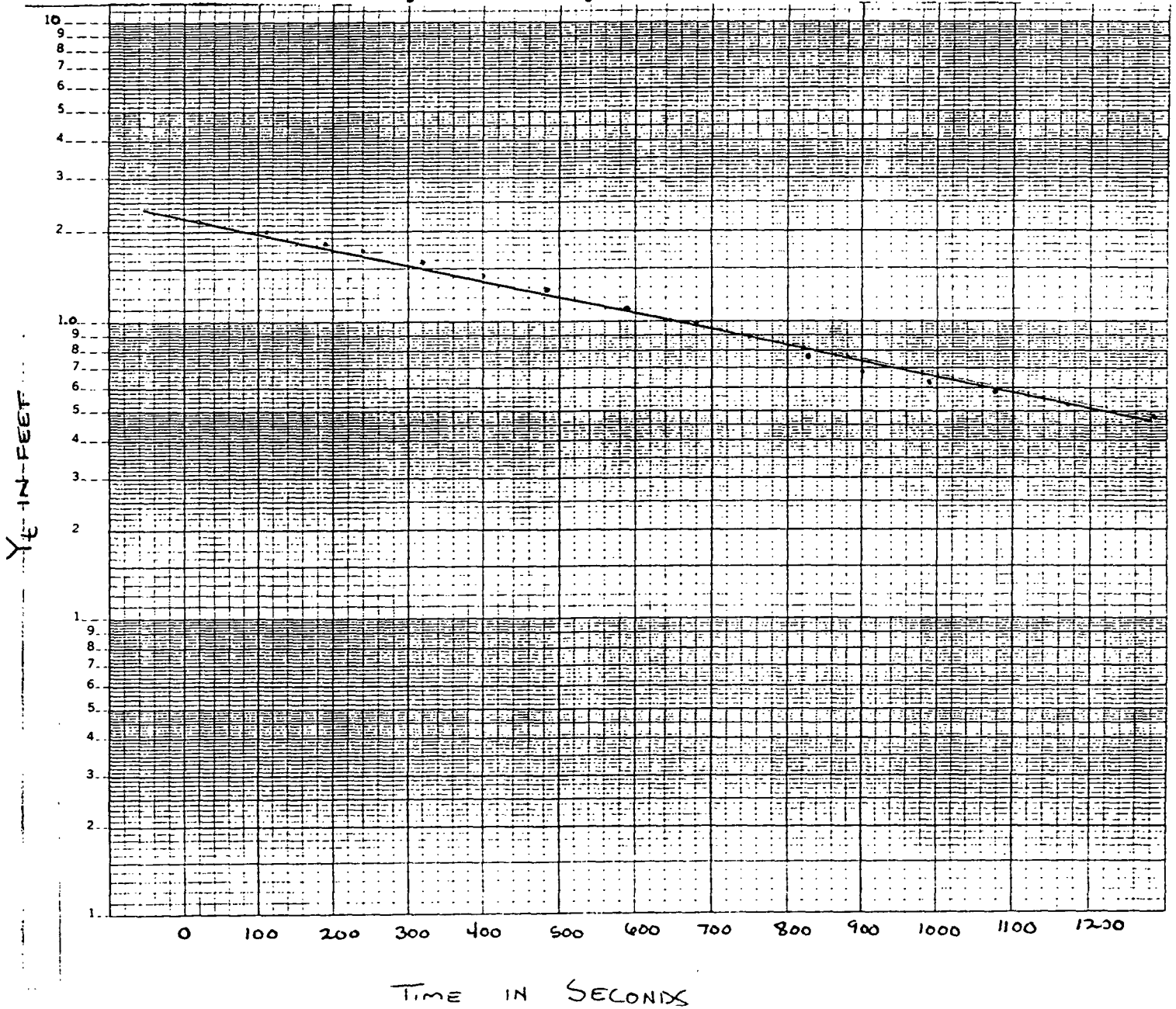
Le/Rw	=	8.4
Lw/Rw	=	8.4
H-Lw	=	6.40
Rc*Rc	=	0.043
2*Le	=	5.6
1/t	=	0.010
ln(yo/yt)	=	0.1
ln(Re/Rw)	=	1.1
ln[(H-Lw)/Rw]	=	2.9 (if >6, then 6 is used in equation)

K	=	0.00001	=	hydraulic conductivity (ft/second)
K	=	6	=	hydraulic conductivity (gpd/sq ft)
T	=	51	=	transmissivity (gpd/ft)



WELL 17

Figure 5.11 Curves relating coefficients A, B, and C to L_e/r_w .



SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "E"

RNK2002

DATE: MARCH 27, 1991

DEFINITIONS:

D	=	2	=	well diameter (inches)
BH	=	8	=	borehole diameter (inches)
RI	=	0.08	=	radius of well (feet)
Rc	=	0.20833	=	radius of well section where water level is rising (feet)
Re	=		=	effective radial distance over which head difference (y) is dissipated (feet)
Rw	=	0.33	=	borehole radius (feet)
Le	=	6.80	=	length of saturated screen (feet)
yo	=	0.07	=	y intercept at time 0 (feet)
yt	=	0.06	=	y intercept at time t (feet)
t	=	122.00	=	time in seconds after start of test (seconds)
H	=	7.20	=	saturated thickness of aquifer (feet)
Lw	=	6.80	=	length from water table to bottom of wellscreen (feet)
A	=	2.00	=	dimensionless coefficient
B	=	0.60	=	dimensionless coefficient
C	=	1.40	=	dimensionless coefficient

EQUATIONS:

$$\ln(Re/Rw) = \frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

Le/Rw	=	20.4
Lw/Rw	=	20.4
H-Lw	=	0.40
Rc * Rc	=	0.043
2 * Le	=	13.6
1/t	=	0.008
ln(yo/yt)	=	0.2
ln(Re/Rw)	=	2.1
ln[(H-Lw)/Rw]	=	0.1 (if >6, then 6 is used in equation)

K	=	0.00001	=	hydraulic conductivity (ft/second)
K	=	6	=	hydraulic conductivity (gpd/sq ft)
T	=	40	=	transmissivity (gpd/ft)

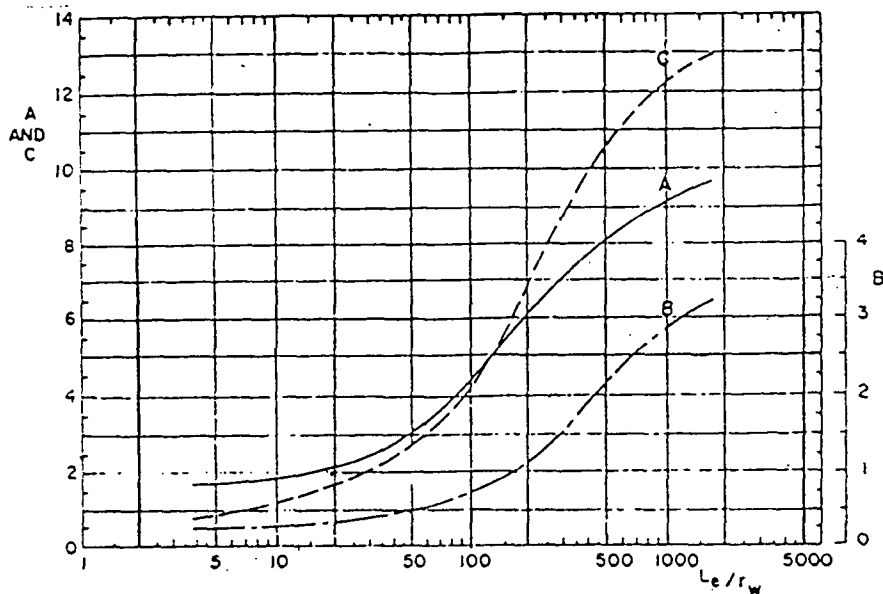
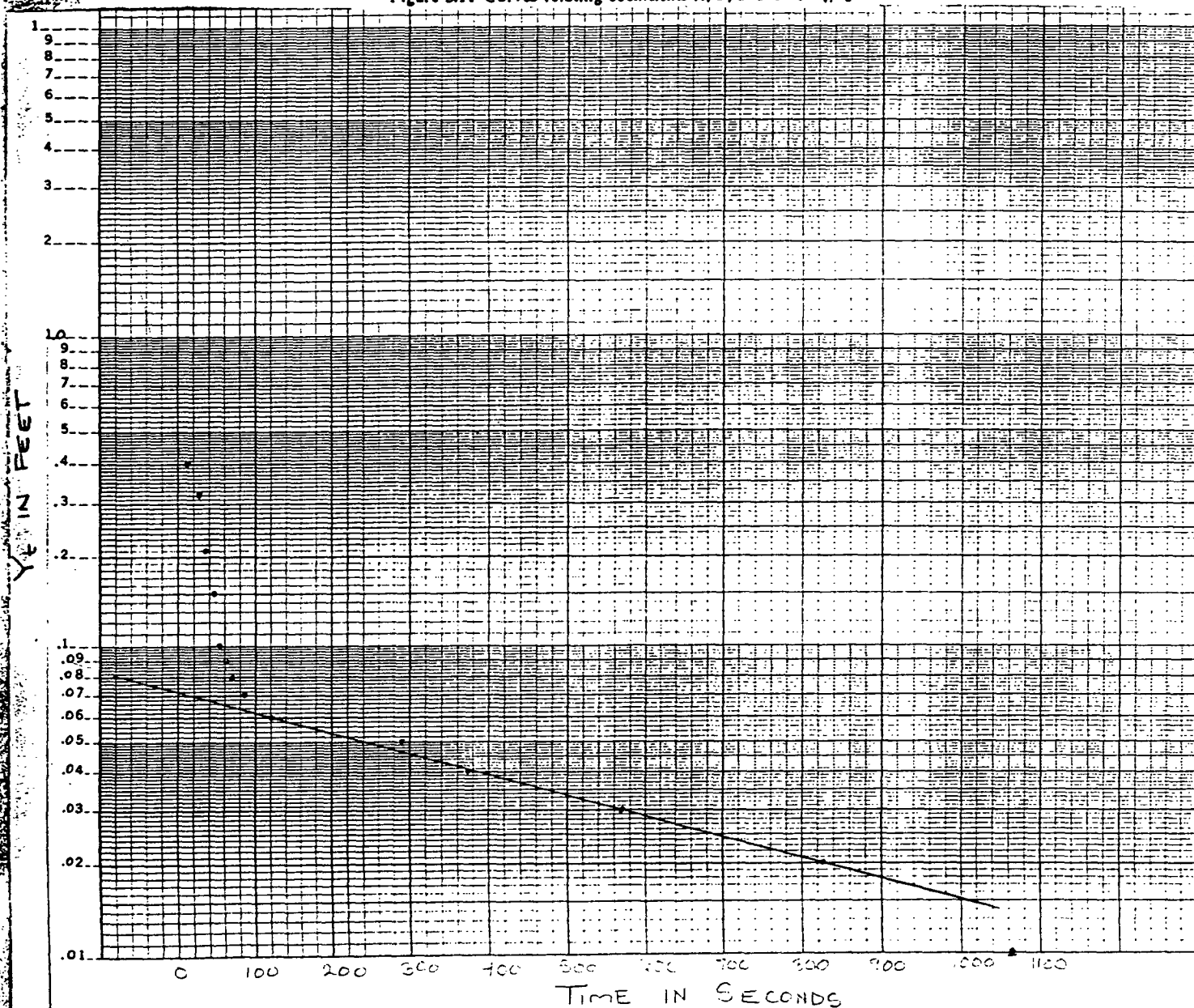


Figure 5.11 Curves relating coefficients A, B, and C to L_e/r_w .



APPENDIX AE

Data from Rinker's Sweetwater Ready Mix Plant

CS

DATE:
MARCH
1997

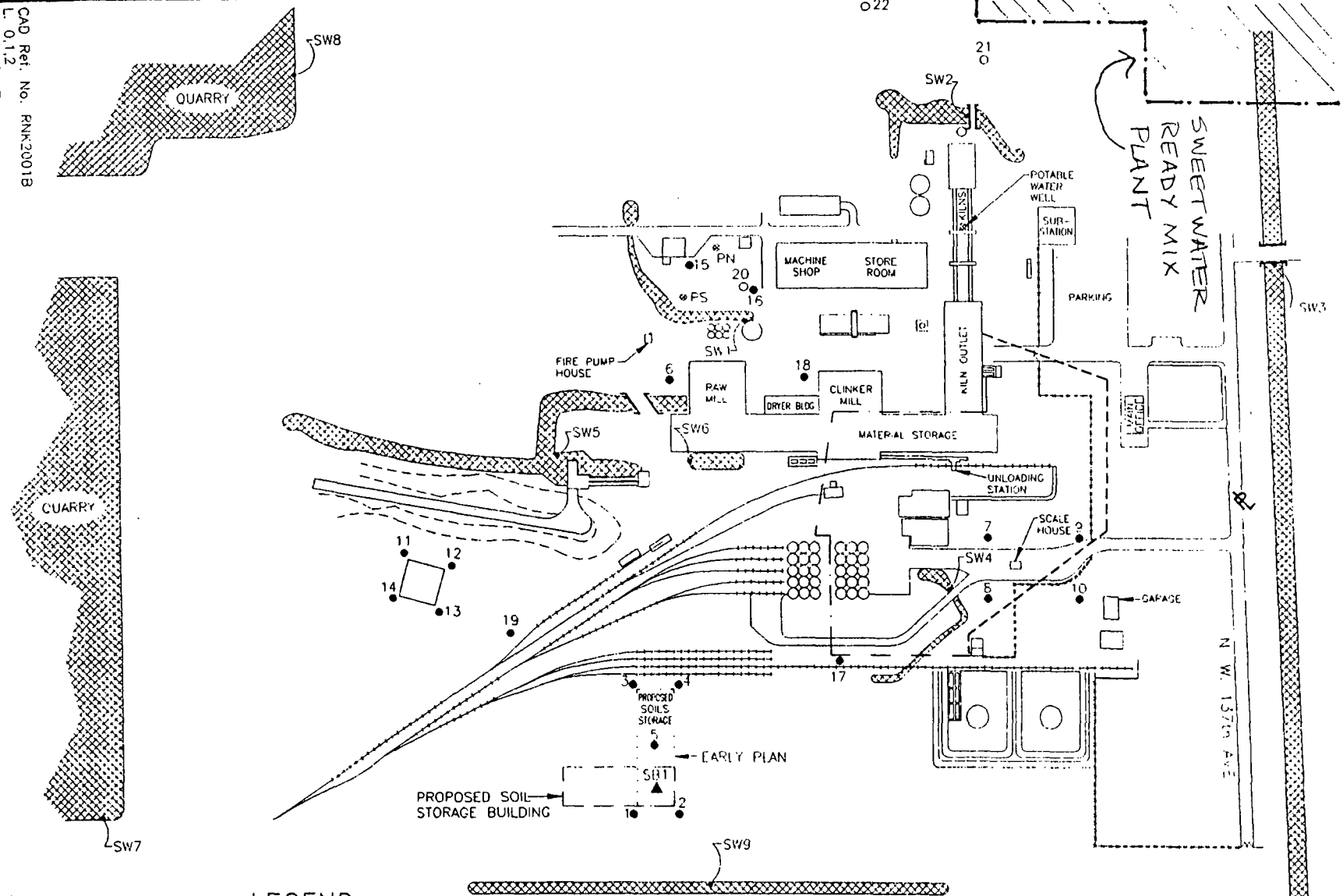
FOR:
RINKER PORTLAND
CEMENT CORP.

SUBJECT:
LOCATION OF SWEETWATER
READY MIX PLANT

1 of 2

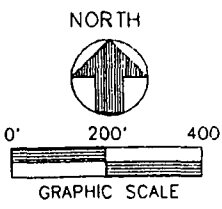
LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA

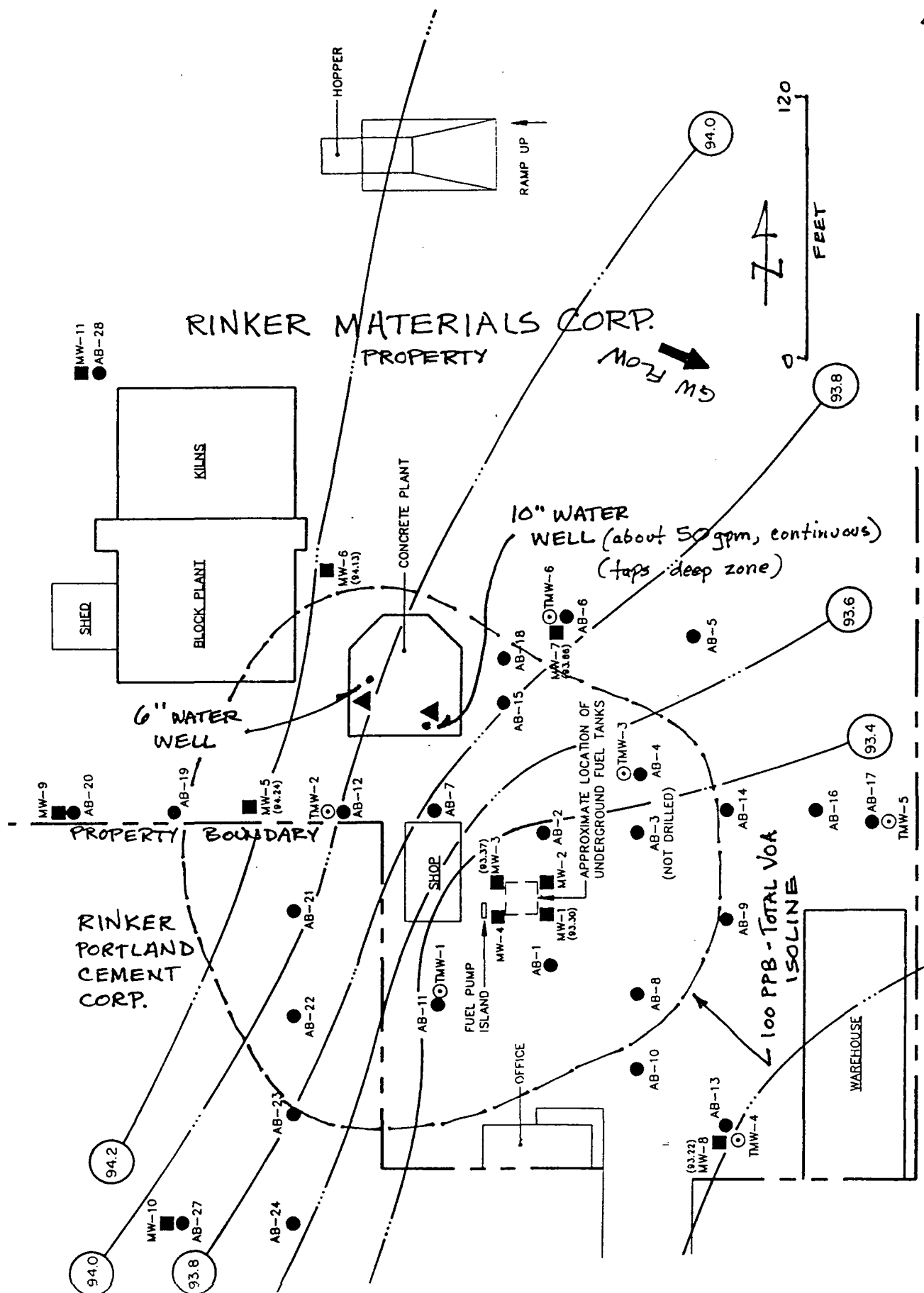
CAD Ref. No. RNN20018
L: 0, 1, 2
L: 5 FRZT XT



LEGEND:

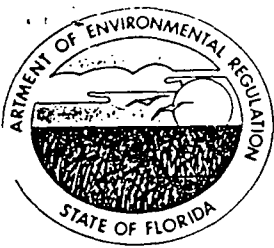
- SW3 SURFACE-WATER MEASURING POINT
- PN WELL
- 3 SHALLOW PIEZOMETER
- 5 DEEP PIEZOMETER
- SB1 SOIL BORING





SWEETWATER READY MIX PLANT - SHOWING WELL LOCATIONS, GROUNDWATER CONTOURS (SHALLOW ZONE), HYDROCARBON PLUME, AND RELATIONSHIP TO RINKER PORTLAND CEMENT CORP.

APPENDIX AF
FDER Letters of QAP Approvals



Florida Department of Environmental Regulation

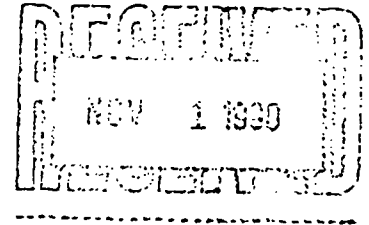
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtmann, Secretary

John Shearer, Assistant Secretary

October 29, 1990



William Kelly
Groundwater Specialists, Inc.
3003 South Congress Ave.
Suite 1C
Palm Springs, FL 33461

SUBJECT: Quality Assurance Review; 880557G-Groundwater
Specialists, Inc. Generic C QA Plan; Revision 10 to
Approved Document;

Dear Mr. Kelly:

The amendments to your approved Generic QA Plan, received on September 26, 1990, have been reviewed and approved. The amendments have been incorporated into the document.

Your Generic (Comprehensive) QA Plan will need to be revised to comply with required information as outlined in the new Manual for Preparing QA Plans (DER-QA-001/90, sent under separate cover). These revisions need to be submitted as soon as possible after January 1, 1990. Although the new format is not required yet, it may be easier to revise your Generic (Comprehensive) QA Plan in the new format, since the required information is organized differently. We strongly suggest following the new format to allow for a smooth transition to current QA policies.

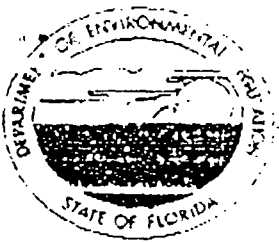
Your cooperation is appreciated in maintaining your QA Plan to reflect current field sampling operations and our QA requirements.

Sincerely,

Sylvia S. Labie, QA Officer
Quality Assurance Section

SSL/KNS/kns

cc: Kent Smith



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Samuel D. Hines, Governor

Carol M. Browner, Secretary

January 22, 1991

Larry Korn
V.O.C. Analytical, Inc.
877 N.W. 61st Street
Ft. Lauderdale, FL 33309

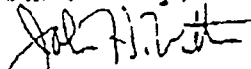
SUBJECT: Quality Assurance Review; V.O.C. Analytical, Inc.
Generic A QA Plan #900376G
Revision 1;

Dear Mr. Korn:

The subject document, received on January 11, 1991, has been reviewed and is approved-pending minor revisions for analytical work only. Before sampling activities, including field analytical work, can be performed appropriate revisions will have to be submitted and approved. Further detail on the status of this plan is explained in the enclosed guidance document (DER QAS #90-03) and enclosed review comments.

As further revisions are necessary, the revised pages must be resubmitted. If you have any questions concerning this matter, please call (904) 488-2796.

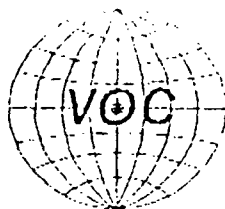
Sincerely,


for Sylvia S. Labie, QA Officer
Quality Assurance Section

SSL/ART/art

Attachments (8): DER QAS #90-03 (Explanation of Status)
annotated QAP pages
review sheets
Section 6 of Rev 0 review comments
DER QAS #89-04, 89-06, 90-04 and 90-05

cc: Andrew R. Tintle



ANALYTICAL

March 27, 1991

Dave Marple
Rinker Materials Corp.
P.O. Box 650679
Miami, Florida 33165

RE: V.O.C. Analytical Q.A. Plan # 900376G

Dear Mr. Marple:

Pursuant to our phone conversation the other day, I am enclosing a copy of the approval letter sent by the FDER.

V.O.C. Analytical's QA Plan was submitted in August of 1990 as a generic plan per Sylvia Labie's instructions. Since that time the requirements have changed in the QA department of the FDER. Therefore V.O.C. Analytical is revising section six which addresses sampling of different matrices and decontamination. This section will be approved officially within the next couple of weeks and we will forward a complete copy to you at that time.

In December of 1990 I spoke to Sylvia Labie about sampling prior to the official approval, and she told me that with documentation (EPA Region IV Sampling Protocol) V.O.C. Analytical can indeed sample all matrices.

Field personnel at V.O.C. Analytical have over five years of sampling experience and have in the past trained county employees in this discipline. All sampling protocol is followed to the letter and documented in field notebooks for regulatory review and admissible in a court of law. We would welcome an inspection of our facility in Fort Lauderdale by the State or County Regulatory Agencies at their convenience.

If you have any questions or need any additional information please call me at (305) 938-8823.

Sincerely,
V.O.C. ANALYTICAL, INC.

Lawrence J. Korn

rinkerqa

GROUNDWATER MONITORING PLAN

ADDENDUM A

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

April 1991

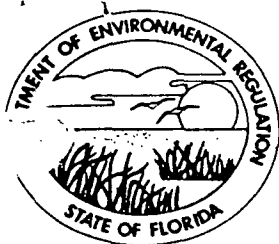
Prepared for:

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

Prepared by:

Groundwater Specialists, Inc.
3003 S. Congress Avenue
Suite 1C
Palm Springs, Florida 33461

**IV. COMPREHENSIVE QUALITY ASSURANCE
PLAN STATEMENT**



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

April 4, 1991 RECEIVED

JUN 7 1996

DEPT OF ENV PROTECTION
WEST PALM BEACH


Mr. Michael D. Vardeman
Rinker Materials Corporation
Portland Cement Corporation
P.O. Box 650679
Miami, FL 33265-0679

Re: Approval of Alternate Procedures
Rinker Materials Corporation
File No. AP-STTF001

Dear Mr. Vardeman:

The Department has reviewed your March 8, 1991, request for approval of alternate procedures for the Rinker facility located at 1200 N.W. 137th Avenue, Miami. Enclosed is the executed copy of the Approval of Alternate Procedures. If you have any questions regarding this approval, please contact me at 904/488-0190.

Sincerely,


Donald R. Ehlenbeck, P.E.
Bureau of Waste Cleanup

DRE/wb

enclosure

cc: Alex Padva - DER/West Palm Beach
Paul Wierzbicki - DER/West Palm Beach



Rinker Materials

March 8, 1991

Mr. John M. Ruddell, Bureau Chief
Bureau of Waste Cleanup
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301

Rinker Materials Corporation
1200 N.W. 137th Avenue
Miami, FL 33182

P.O. Box 650679
Miami, FL 33265-0679

Facsimile (305) 223-5403
Telephone (305) 221-7645

RE: Alternate Procedure To Chapter 17-775 FAC
"Soil Thermal Treatment Facilities"

Dear Mr. Ruddell:

This letter is to present a request to the Department for approval of alternate procedures as outlined under Chapter 17-775.500 Florida Administrative Code (FAC) Approval of Alternate Procedure. Approval of the alternate procedures would allow Rinker Materials Corporation (RMC) to fully comply with the intent of the "clean fill" requirement of Chapter 17-775 FAC while maintaining optimum cement production, quality products, and the protection of the environment.

To provide some background, Rinker Materials Corporation (RMC) located at 1200 NW 137 Avenue, Miami, Florida manufactures various types of portland cement at the Miami location for sales and distribution throughout the State of Florida.

The production process begins with the quantitative and qualitative processing of raw materials (limestone, rock, sand, bottom ash, slag etc.) into a high solids slurry. This slurry is then introduced into two 475 foot rotary kilns. The slurry remains in the kilns for 3 to 3-1/2 hours where it is heated, dried and calcined at a material temperature of approximately 2750 degrees F.

At this temperature of fusion a mineralogical product called clinker is produced. The resulting clinker (approximately 1700 tons per day) is cooled and ground with gypsum and other special property admixtures to produce the product known as portland cement (approximately 1900 tons per day).

All petroleum contaminated soils that are received by Rinker are consumed completely into our production operation as "substitute" for a portion of the like raw materials (ie: limerock, sand) and is subject to the same raw material processing at the onset of the production process.

March 8, 1991
Mr. John M. Ruddell
Page 2

On the average petroleum contaminated soils represent only about 12% of the raw material feed stock when compared to the yearly production of portland cement.

Due to the specific nature of our manufacturing process we are seeking relief from the criteria set forth in 17-775.400 FAC "Criteria For Clean Soil" all Sections and 17-775.410 FAC "Soil Sampling And Analysis" Section (5). We believe that this relief is justified due to the manner in which petroleum contaminated soils are incorporated as production raw materials and due to the fact that Rinker does not treat soils for utilization as "clean fill."

I have enclosed RMC's alternate proposal in the same format outlined in Chapter 17-775.500 FAC. If necessary, we welcome the opportunity to meet with you to discuss RMC's alternate request. Otherwise, should you have any questions, call me at (305) 221-7645.

Sincerely,

Michael D. Vardeman
Manager, Material Substitution

MDV:lg

cc: Mr. Paul Wiersbicki, Waste Cleanup Supervisor
DER - West Palm Beach
Mr. Don Ellenbeck
DER - Tallahassee

REQUEST FOR APPROVAL OF ALTERNATE PROCEDURES

UNDER CHAPTER 17-775.500 FAC

Chapter 17-775.500 FAC

- (2) (a) - Rinker Materials Corporation 1200 NW 137 Avenue
Miami, Florida 33182
- (2) (b) - Rinker Materials Corporation is requesting exemption from Chapter 17-775.400 FAC "Criteria For Clean Soils" Section (1)(2)(3)(4) and Chapter 17-775.410 FAC "Soil Sampling and Analysis" Section (5).
- (2) (c) - The basis for the exemption to 17-775.400 FAC (1)(2)(3)(4) are as follows:
1. Rinker Materials does not process petroleum contaminated soils into "clean fill." All petroleum contaminated soils are used entirely as raw materials for the production of clinker/portland cement.
 2. In the process of clinker production, all raw materials (slurried) are processed through direct fired rotary kilns for 3 to 3-1/2 hours and are converted to clinker with a kiln exit temperature of approx. 2750°F.
 3. The testing of composite sampling from clinker production (Exhibit A) demonstrates that clinker composition does not approach the upper values set for "clean soils." In fact, all sample reports document levels of concerned contaminants to be below 25% of the maximum values set for classification as "clean soil."

The basis for the exemption to 17-775.410 FAC (5) are as follows:

1. Rinker Materials does not process petroleum contaminated soils into "clean fill." All petroleum contaminated soils are used entirely as raw materials for the production of clinker/portland cement.
2. In the process of clinker production, all raw materials (slurried) are processed through direct fired rotary kilns for 3 to 3-1/2 hours and are converted to clinker with a kiln exit temperature of approx. 2750°F.

3. The testing of composite sampling from clinker production (Exhibit A) demonstrate that clinker composition does not approach the upper values set for "clean soils." In fact, all sample reports document levels of concerned contaminants to be below 25% of the maximum values set for classification as "clean soil."
4. Clinker production at Rinker is a continuous, 7 days per week, 24 hours per day and is maintained at a rate of approximately 1700 tons per day (24 hr.).
5. Contaminated soils represent only about 12% of the total raw materials consumed to make clinker and only about 10% of the portland cement produced.

(2) (d) - As an alternate procedure for 17-775.400 FAC "Criteria For Clean Soils" Section (1)(2)(3)(4), Rinker proposes the use of the maximum concentration (not to exceed) as stated in Table I of 17-775.400 FAC as the maximum concentration allowed for soils entering the raw materials feed process.

As an alternate procedure for 17-775.410 FAC "Soil Sampling and Analysis" Section (5), Rinker proposes sampling clinker production every 400 tons or every eight hours whichever is less and composite these samples on a weekly basis (7 days). Each weekly composite sample would then be analyzed for parameters identified in Rule 17-775.400 FAC (1)(2) and (4) and reported accordingly.

(2) (e) - As it relates to the alternate procedure for 17-775.400 FAC (1)(2)(3)(4), we feel that by limiting soils entering the cement manufacturing process to the maximum allowable concentration for "clean soil" (Table I) clinker production incorporating contaminated soils as raw material can not exceed those same "clean soil" standards.

This alternate procedure would comply with the intent of Chapter 17-775 FAC to safeguard against added environmental contamination and or the spread of environmental contamination. (See Exhibit A)

As it relates to the alternate procedure for 17-775.410 FAC (5), Rinker feels that due to the high volume of clinker production and the relatively small percentage of raw material feed represented by contaminated soils, the sampling called for in 17-775.410 FAC (5) would be excessive based upon the actual analytical influences that contaminated soils could have on overall clinker analysis (See Exhibit A).

RECEIVED

JUN 7 1996

STATE OF FLORIDA

DEPT OF ENV PROTECTION
WEST PALM BEACH

DEPARTMENT OF ENVIRONMENTAL REGULATION

IN RE:
Rinker Materials Corporation)
Request Pursuant to Florida)
Administrative Code Rule 17-775.500)

File No. AP-STTF001

APPROVAL OF ALTERNATE PROCEDURES

This cause comes before me upon receipt of a request by Rinker Materials Corporation for the approval of alternate procedures and requirements for the Rinker facility located at 1200 N.W. 137th Avenue, Miami, pursuant to Florida Administrative Code (F.A.C.) Rule 17-775.500. A Copy of the request is attached as Exhibit A.

FINDINGS OF FACT

1. The applicant requests that exceptions be granted for compliance with F.A.C. Rule 17-775.400(1),(2),(3),(4) that requires soil which has been treated by a soil thermal treatment facility to meet certain cleanup levels to be classified as clean soil, and F.A.C. Rule 17-775.410(5) which requires sampling and analysis of soil following thermal treatment for every eight hours of operation or each 400 tons of soil.

2. The applicant does not process contaminated soil into "clean soil", rather the contaminated soils are used entirely as raw materials for the production of clinker/portland cement, and the applicant proposes to do the following:

a. In the process of clinker production, use contaminated soil as raw material which is processed through direct fired rotary kilns for three to three and a half hours and is

converted to clinker with a kiln exit temperature of approximately 2750 °F.

b. Use the contaminated soil as approximately 12 percent of the total raw materials consumed in the production of clinker and approximately 10 percent of the portland cement produced.

c. Limit the maximum concentrations of metals in contaminated soil entering the raw materials feed process to the clean soil criteria of F.A.C. Rule 17-775.400(4).

d. As an alternate procedure for F.A.C. Rule 17-775.410(5), sample clinker production every 400 tons or every eight hours whichever is less and composite these samples on a weekly basis (7 days), and sample the clinker for the parameters and levels identified in F.A.C. Rule 17-775.400.

3. The applicant contends that this request satisfies the criteria for approval of an alternate procedure and requirements as set forth in F.A.C. Rule 17-775.500, and has provided laboratory analysis as Exhibit A to its request to demonstrate that clinker meets the criteria for clean soil.

Based on the information provided by the applicant, the Department finds that the applicant's plan will provide environmental protection substantially equivalent to that provided by compliance with the requirements established in Florida Administrative Code Rule 17-775.400(1),(2),(3),(4) and 17-775.410(5).

CONCLUSIONS OF LAW

Florida Administrative Rule 17-775.500 authorizes the approval

by the Secretary or her designee of alternate procedures and requirements concerning the regulation of soil thermal-treatment facilities.

The Department concludes that the applicant has adequately demonstrated that the proposed alternate procedure provides a substantially equivalent degree of protection for the lands, surface waters, and ground waters of the State as the established requirement and that the alternate procedure is at least as effective as the established requirements.

Upon consideration of the foregoing it is therefore ORDERED that Rinker Materials Corporation's request for an alternate procedure and requirement is GRANTED.

Persons whose substantial interests are affected by the above proposed action have a right, pursuant to Section 120.57, F.S., to petition for an administrative determination (hearing) on the proposed action. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 21 days of publication of this notice. A copy of the Petition must also be mailed at the time of filing to Naval Facilities Engineering Command, Southern Division, above at the address indicated. Failure to file a petition within the 21 days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, F.S.

The petition shall contain the following information: (a) The name, address, and telephone number of each petitioner; the

Department's identification number and the county in which the subject matter or activity is located; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the subject agency proposed action have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 21 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only

be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

When the Order is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road. Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be file within 30 days from the date the Final Order is filed with the clerk of the Department.

DONE AND ORDERED this 1ST day of April,
1991 in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

FILING AND ACKNOWLEDGEMENT

FILED, on this date, pursuant to S120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Carmello B. Baez 4/16/91
Clerk Date

R. G. Wilkins
Richard G. Wilkins, Director
Division of Waste Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Instructions for Completing
Untreated Soil Reporting Form

Samples from both untreated and treated soil must be collected and analyzed. Pretreatment sampling is based on the volume of soil from each source, and post treatment sampling is determined by the hours of operation. Each composite sample must be made up of several representative samples. For all analytical results showing below detection limits, BDL should be shown in the proper space. When results indicate contaminants above detectable limits, the concentrations should be shown. Copies of lab reports must be attached to form.

Column

1. Date soil received.
2. Identification number of specific batch of soil.
3. Sample number. The required number of samples is based upon the volume of soil before treatment and is based upon hours of operation after treatment.
4. Total volume of soil being processed through heat treatment facility, yd³ or tons.
5. Metals concentrations of Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver in the untreated soil in ppm (mg/kg) by extraction procedure EPA Method 3050.
6. Total benzene, toluene, ethylbenzene and xylene concentration in untreated soils in ppb (ug/kg). EPA Method 5030/8020. There are no maximum allowable concentrations.
7. Total recoverable petroleum hydrocarbons in untreated soils. EPA Draft Method 9073.
8. Other parameters that are monitored by the facility should be indicated but not quantified. Attach lab results only.

Florida Department of Environmental Regulation
Soil Thermal Treatment Facility
Untreated Soil Reporting Form

Name of Facility: _____
Air Permit No.: _____
Soil Treatment Permit No.: _____
Stationary _____ or Mobile Facility: _____

Month: _____ Year: _____

[illegible]

Treated Soil Reporting Form

Samples must be collected and analyzed at least once each day that the thermal treatment facility is processing contaminated soil. Samples from both untreated and treated soil must be collected and analyzed. Pretreatment sampling is based on the volume of soil from each source, and post treatment sampling is determined by the hours of operation. Each composite sample must be made up of several representative samples. For all analytical results showing below detection limits, BDL should be shown in the proper space. When results indicate contaminants above detectable limits, the concentrations should be shown. Copies of lab reports must be attached to form.

Column

1. Date soil processed.
2. Identification number of specific batch of soil.
3. Sample number. The required number of samples is based upon the volume of soil before treatment and is based upon hours of operation during treatment.
4. Number of hours required of treat specific batch of soil.
5. Amount of soil that was processed through thermal treatment facility, yd³ or tons.
6. Total metals concentrations of Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver in the treated soil in ppm (mg/kg) by digestion procedure EPA Method 3050.
7. TCLP metals concentrations of Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver in the treated soil in ppm (mg/l) by extraction procedure EPA Method 1311.
8. Total benzene, toluene, ethylbenzene and xylene in treated soil in ppb. (Maximum allowable to dispose of as clean fill-100 ppb).
9. Total recoverable petroleum hydrocarbons in treated soil in ppm. Maximum allowable to dispose of as clean fill-10 ppm, or 50 ppm if PAHs less than 6 ppm and VOH less than 50 ppb. EPA Draft Method 9073.
10. PAH concentrations in the treated soil consisting of (Benzo(a)pyrene, Benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Chrysene, Dibenzo(a,h)anthracene, Ideno(1,2,3-c,d)pyrene), in ppm (mg/kg) by EPA Methods 3510/8250, 3510/8270, 3540/8250, 3540/8270, 3550/8250, 3550/8270, 3540/8310 or 3550/8310.
11. Total volatile organic halogen concentrations in treated soils in ppb by EPA Method 5030/8010.

Soil Thermal Treatment Facility
Treated Soil Reporting Form

Name of Facility: _____
Air Permit No.: _____
Soil Treatment Permit No.: _____
Stationary: _____ or Mobile Facility: _____

Month: _____ Year: _____

[illegible]

IV. COMPREHENSIVE QUALITY ASSURANCE PLAN (CQAP) - STATEMENT

RECEIVED

JUN 7 1996

A. Pre-treatment Analysis

DEPT OF ENV PROTECTION
WEST PALM BEACH

Rinker Materials Corporation requires that all petroleum contaminated soils presented for Material Substitution (thermal treatment) be analyzed according to the stated requirements in 17-775.410 section (3) and be certified by a laboratory with an approved Comprehensive Quality Assurance Plan (see exhibit B).

No material will be accepted prior to receipt of analysis, laboratory certification and screening by Rinker to assure compliance with all permitting criteria.

The analytical results for untreated petroleum contaminated soils received by Rinker are to be reported via DER form 17-775.900 (2).

B. Post-treatment Analysis

Rinker Materials Corporation will provide post-treatment analysis as set forth in the applicable section (s) of 17-775.400 and 17-775.410 and in compliance the "Alternate Procedure" approved by Florida Department of Environmental Regulation, Division of Waste Management dated April 1, 1991 and registered as File No. AP-_____. (TO BE ISSUED)

These analyses will be performed by an outside laboratory with an approved F.D.E.R. Quality Assurance Plan. Certification of the analytical results shall be documented by means of a Quality Assurance Certification. (see exhibit B).

1. Clinker Production Sampling Procedure

A. Based upon the "Approval of Alternate Procedure" issued by FDER, Division of Waste Management dated April 1, 1991 and registered as file No. AP-_____, Rinker will adhere to the following sampling procedure.

- a. "As an alternate procedure for F.A.C. Rule 17-775.410(5), sample clinker production every 400 tons or every eight hours whichever is less and composite these samples on a weekly basis (7 days), and sample the clinker for the parameters and levels identified in F.A.C. Rule 17-775.400."

RECEIVED

-2-

JUN 7 1996
DEPT OF ENV PROTECTION
WEST PALM BEACH

- b. Each subsample sample will be obtained from within the product stream continuously exiting the clinker cooler (clinker temperature 400°F plus) using a steel boat with dimension of approximately 8 inches long by 4 inches wide by 2 inches deep.
- c. Each subsample sample will be placed in a appropriately sized clean stainless steel container, cooled to a temperature sufficient to allow covering with lid and immediately delivered to a large wide-mouthed stainless steel container covered with foil and lid and placed in a refrigerator and kept at 4°C.
- d. Equal size subsample will be added to the container at the rate of every 400 tons or every eight hours which ever is less and kept at 4°C.
- e. When all subsamples have been taken (weekly-7 days) entire sample will be placed into a stainless steel tray, lightly mixed, and split using a Humboldt Model H-3985 splitter to obtain a 1 quart representative sample.
- f. A Representative Sample (1 quart) will then be placed in a container supplied by the subcontract laboratory, put in Ice and sent for analysis.
- g. Each sample presented for subcontract laboratory analysis will be accompanied with field records documenting the following information.

- *Date of Subsample
- *Time of Subsample
- *Site of Subsample
- *Volume of Subsample
- *Subsample identification number
- *Name(s) of sampler(s)
- *Start date for sample compositing
- *Composite sample identification number
- *Date composite sample provided to subcontract laboratory
- *Copy of laboratory chain of custody

RECEIVED

JUN 7 1996

-3-

DEPT OF ENV PROTECTION
WEST PALM BEACH

Rinker Materials Corporation will utilize VOC Analytical Inc. 877 NW 61 Street, Fort Lauderdale, Florida 33309 with Generic A QA Plan #900376G for post treatment analysis set forth in the applicable section(s) of 17-775.400 and 17-775.410. (See attached FDER, Quality Assurance Section Approval).

The results for post treatment analysis are to be reported via DER form 17-775.900 (3).

C. Monitor Well Sampling Frequency and Analysis

All sampling and analysis specified in the "Groundwater Monitoring Plan" will be performed by Groundwater Specialists Inc., 3003 South Congress Avenue, Suite 1C, Palm Springs, Florida 33461 and in compliance with their approved Quality Assurance Plan, Generic C QA Plan - 880557G (See attached FDER Quality Assurance Approval).

QUALITY ASSURANCE CERTIFICATION

Pursuant to the requirements set forth in FDER's chapter 17-775,

_____ herewith submit
(laboratory)

analytical results for _____
(material)

from _____ and represented by _____
(site) (number of samples)

and referenced as lab number/date _____.

All sampling and analysis were performed according to all the applicable parameters of 17-775.410 "Soil Sampling and Analysis".

Laboratory Name _____

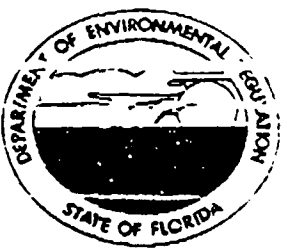
Address _____

Comprehensive Quality Assurance
Plan (CQAP) No. _____

Authorized Laboratory Signature _____

Date _____

NOTE: Please provide a copy of the Quality Assurance Plan approval letter issued by Florida Department of Environmental Regulation, Quality Assurance Section.



Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

January 22, 1991

Larry Korn
V.O.C. Analytical, Inc.
877 N.W. 61st Street
Ft. Lauderdale, Fl 33309

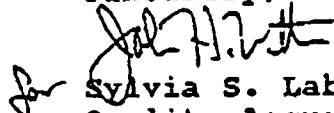
SUBJECT: Quality Assurance Review; V.O.C. Analytical, Inc.
Generic A QA Plan #900376G
Revision 1;

Dear Mr. Korn:

The subject document, received on January 11, 1991, has been reviewed and is approved-pending minor revisions for analytical work only. Before sampling activities, including field analytical work, can be performed appropriate revisions will have to be submitted and approved. Further detail on the status of this plan is explained in the enclosed guidance document (DER QAS #90-03) and enclosed review comments.

As further revisions are necessary, the revised pages must be resubmitted. If you have any questions concerning this matter, please call (904) 488-2796.

Sincerely,


Sylvia S. Labie, QA Officer
Quality Assurance Section

SSL/ART/art

Attachments (8): DER QAS #90-03 (Explanation of Status)
annotated QAP pages
review sheets
Section 6 of Rev 0 review comments
DER QAS #89-04, 89-06, 90-04 and 90-05

cc: Andrew R. Tintle

RECEIVED

JUN 7 1996

DEPT OF ENV PROTECTION
WEST PALM BEACH
March 27, 1991



ANALYTICAL

Dave Marple
Rinker Materials Corp.
P.O. Box 650679
Miami, Florida 33165

RE: V.O.C. Analytical Q.A. Plan # 900376G

Dear Mr. Marple:

Pursuant to our phone conversation the other day, I am enclosing a copy of the approval letter sent by the FDER.

V.O.C. Analytical's QA Plan was submitted in August of 1990 as a generic plan per Sylvia Labie's instructions. Since that time the requirements have changed in the QA department of the FDER. Therefore V.O.C. Analytical is revising section six which addresses sampling of different matrices and decontamination. This section will be approved officially within the next couple of weeks and we will forward a complete copy to you at that time.

In December of 1990 I spoke to Sylvia Labie about sampling prior to the official approval, and she told me that with documentation (EPA Region IV Sampling Protocol) V.O.C. Analytical can indeed sample all matrices.

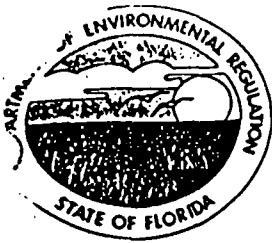
Field personnel at V.O.C. Analytical have over five years of sampling experience and have in the past trained county employees in this discipline. All sampling protocol is followed to the letter and documented in field notebooks for regulatory review and admissible in a court of law. We would welcome an inspection of our facility in Fort Lauderdale by the State or County Regulatory Agencies at their convenience.

If you have any questions or need any additional information please call me at (305) 938-8823.

Sincerely,
V.O.C. ANALYTICAL, INC.


Lawrence J. Korn

rinkerqa



Florida Department of Environmental Regulation

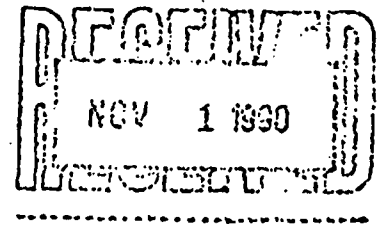
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor

Dale Twachtman, Secretary

John Shearer, Assistant Secretary

October 29, 1990



William Kelly
Groundwater Specialists, Inc.
3003 South Congress Ave.
Suite 1C
Palm Springs, FL 33461

SUBJECT: Quality Assurance Review; 880557G-Groundwater
Specialists, Inc. Generic C QA Plan; Revision 10 to
Approved Document;

Dear Mr. Kelly:

The amendments to your approved Generic QA Plan, received on September 26, 1990, have been reviewed and approved. The amendments have been incorporated into the document.

Your Generic (Comprehensive) QA Plan will need to be revised to comply with required information as outlined in the new Manual for Preparing QA Plans (DER-QA-001/90, sent under separate cover). These revisions need to be submitted as soon as possible after January 1, 1990. Although the new format is not required yet, it may be easier to revise your Generic (Comprehensive) QA Plan in the new format, since the required information is organized differently. We strongly suggest following the new format to allow for a smooth transition to current QA policies.

Your cooperation is appreciated in maintaining your QA Plan to reflect current field sampling operations and our QA requirements.

Sincerely,

Sylvia S. Labie, QA Officer
Quality Assurance Section

SSL/KNS/kns

cc: Kent Smith





Rinker Materials

RECEIVED

JUN 7 1996

November 8, 1993

DEPT OF ENV PROTECTION
WEST PALM BEACH

Rinker Materials Corporation
1200 N.W. 137th Avenue
Miami, FL 33182

P.O. Box 650679
Miami, FL 33265-0679

Facsimile (305) 223-5403
Telephone (305) 221-7645

**FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SOUTHEAST DISTRICT
1900 SOUTH CONGRESS AVENUE
WEST PALM BEACH, FLORIDA 33406
ATTN: PAUL WIERZBICKI**

RE: GENERAL PERMIT NO: 5013-195017

Dear Paul:


Enclosed is the notice of intent required by Rule 17-775 for Rinker Materials to modify General Permit No. 5013-195017 to accept and treat low level PCB contaminated soils.

As discussed previously this modification addresses:

1. PCB contaminated soils
2. Moving the leachate collection outside the building
3. Drummed material operations.

If there are any questions please contact me at 305-221-7645. Thank you for your assistance in this matter.

Very Truly Yours,


Michael D. Vardeman
Cement Division Environmental Manager

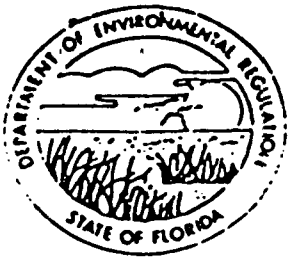


EXHIBIT A

Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary

NOTICE OF INTENT TO USE THE GENERAL PERMIT TO
CONSTRUCT/OPERATE A SOIL THERMAL TREATMENT FACILITY

INSTRUCTIONS: Please provide all information as requested below. For stationary facilities submit the original and four copies of this notice of intent application along with site location map, process flow chart drawings of the treatment facility, and groundwater monitoring plan to the appropriate district office, and one copy of the groundwater monitoring plan to the Bureau of Waste Cleanup. For mobile units submit applicable information to the Bureau of Waste Cleanup, Florida Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

Type: Stationary X Mobile General Permit No.: 5013-195017Name of Facility: RINKER MATERIALS CORPORATION County: DADEFacility Address: 1200 NW 137 AVENUE MIAMI, FLORIDA 33182Latitude 25 ° 46 ' 48 " N Longitude 80 ° 25 ' 10 " WTelephone Number: 305-221-7645Name of Owner(s): RINKER MATERIALS CORPORATIONOwner(s) Address if different from above: SAMEDepartment of Environmental Regulation Air Permit Number: A013-233208Expiration Date: January 15, 1995Length of primary chamber (ft): 80ft.Heat generation capability (BTU/hr): 40mmCapacity of facility at a 25 minute retention time
(yd³/hr): or (tons/hr): 40Operating temperature of primary chamber (°F): 1000° DischargeEstimated average volume of soil to be processed (yd³/mth): 5,000 To 29,000Covered storage area (ft²): 30,000 Height of cover (ft): 45'Floor construction (cement, asphalt, etc.): Cement

RECEIVED

AUG 10 1993

Statement by Applicant:

I hereby attest as the owner or authorized representative of
RINKER MATERIALS CORPORATION (attach letter of
authorization) the preceding information is accurate and that I
will operate this facility in accordance with the requirements of
Chapter 17-775 entitled "Soil Thermal Treatment Facilities." I
understand that failure to operate this facility as required will
constitute grounds for revocation of this permit.

James S. Jenkins III
Signature of Owner or Authorized Representative

James S. Jenkins III, V.P. Cement Operations
Name and Title

8-5-93
Date

Statement by Florida Registered Professional Engineer:

I hereby certify that the above information pertinent to the
construction and operation of this facility is correct and that
this facility is capable of operating to achieve the requirements
and standards as set forth in Chapter 17-775 of the Florida
Administrative Code.

Donald A. Beers
Signature of Engineer
(affix seal)

Donald A. Beers, P.E.
Engineer's Name (Please Type)

PE 0032530
Florida Registration Number

Rinker Materials Corporation
Company Name

P.O. BOX 24635 West Palm Beach
Address Street City 33416-4635

8/10/93 407-820-8346
Date Telephone Number

RECEIVED

AUG 10 1993

DEPT. OF ENV. PROTECTION
WEST PALM BEACH



Lawton Chiles
Governor

Florida Department of Environmental Protection

Southeast District
P.O. Box 15425
West Palm Beach, Florida 33416

Virginia B. Wetherell
Secretary

SEP 2 1 1993

NOTICE OF PERMIT ISSUANCE

CERTIFIED MAIL

In the Matter of an Application
for Permit by:

Mr. James S. Jenkins, III
Rinker Material Corporation
Post Office Box 650679
Miami, Florida 33265-0679

DEP File No. AO 13-234126
Dade County

Enclosed is Permit Number AO 13-234126 to operate an air pollution source issued pursuant to Section 403.087, Florida Statutes.

A person whose substantial interests are affected by this permit may petition for an administrative proceeding (hearing) in accordance with Section 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 14 days of receipt of this Permit. Petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. Failure to file a petition within this time period shall constitute a waiver of any right such person may have to request an administrative determination (hearing) under Section 120.57, Florida Statutes.

The Petition shall contain the following information;

- (a) The name, address, and telephone number of each petitioner, the applicant's name and address, the Department Permit File Number and the county in which the project is proposed;
- (b) A statement of how and when each petitioner received notice of the Department's action or proposed action;
- (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action;
- (d) A statement of the material facts disputed by Petitioner, if any;
- (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action;
- (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; and
- (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

Mr. James S. Jenkins, III
Rinker Material Corporation
Post Office Box 650679
Miami, Florida 33265-0679
Page 2

DEP File No. AO 13-234126


If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this permit. Persons whose substantial interests will be affected by any decision of the Department with regard to the application have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 14 days of receipt of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed time frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

This permit is final and effective on the date filed with the Clerk of the Department unless a petition is filed in accordance with the above paragraphs or unless a request for extension of time in which to file a petition is filed within the time specified for filing a petition and conforms to Rule 17-103.070, F.A.C. Upon timely filing of a petition or a request for an extension of time this permit will not be effective until further Order of the Department.

When the Order (Permit) is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the Clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 days from the date the Final Order is filed with the Clerk of the Department.

Executed in West Palm Beach, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

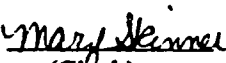

for Mary E. S. Williams
Director of District Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT ISSUANCE and all copies were mailed by certified mail before the close of business on 9/21/93 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to §120.52(11), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

 SEP 21 1993
(Clerk) (Date)

cc: Dade County Environmental Resources Management



Lawton Chiles
Governor

Florida Department of Environmental Protection

Southeast District
P.O. Box 15425
West Palm Beach, Florida 33416

Virginia B. Wetherell
Secretary

PERMITTEE:

Mr. James S. Jenkins, III
Rinker Material Corporation
Post Office Box 650679
Miami, Florida 33265-0679

I.D. NUMBER: 50/DAD/13/0014

PERMIT/CERTIFICATION NUMBER: AO 13-234126

DATE OF ISSUE: SEP 21 1993

EXPIRATION DATE: September 17, 1998

COUNTY: Dade

LATITUDE/LONGITUDE: 25°46'48"N/80°25'10"W

UTM: Zone 17: 558.2 Km. E; 2851.3 Km. N

PROJECT: Rinker Material Corporation

Modification of Stone Dryer at Portland
Cement Manufacturing Plant

This permit is issued under the provisions of Chapter 403, Florida Statutes, and Florida Administrative Code Rule 17-212 & 17-4, and in conformance with all existing regulations of the Florida Department of Environmental Protection. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

OPERATE: Stone dryer system decontaminating up to 40 TPH of petroleum contaminated soil. Major components of the system are Gencor Ultraflame low excess air oil burners for the existing 7 ft. diameter by 80 ft. long rotary dryer, an 85° efficient Joy-Western multicyclone, a 99.9% efficient Micropul baghouse with 3,366 a sq. ft. of cloth area, a 99.5% efficient natural gas fired IT/McGill afterburner, two heat exchangers for energy recovery, a raw material gallery controlled with a Micropul baghouse that discharges approximately 500 acfm at 400°F through a 1.0 ft. square stack that is 45 ft. high, material handling equipment (screens, inclined belt feeders, bucket elevator, crusher, and stacker), fuel systems (used petroleum oil meeting the provisions of 40 CFR 266, Subpart E, propane, natural gas, and No. 2 fuel oil for the dryer, and natural gas and propane for the afterburner), a by-pass stack to be used only when the kiln is drying stone, and associated equipment. Air pollutants from the dryer are discharged in approximately 36,500 acfm of 800°F flue gases through a 4.5 ft. diameter by 80 ft. high stack.

IN ACCORDANCE WITH: Certificate of Completion of Construction for Permit Number AC 13-187599A received June 25, 1993; amendment to the modification number AC 13-187599 issued May 17, 1993; modification number AC 13-187599 issued September 24, 1993; application to modify existing stone dryer received December 10, 1990. (none are attached).

LOCATED AT: 1200 N.W. 137th Avenue, Miami, Dade County, Florida.

TO SERVE: Soil Thermal treatment facility (SIC # 4953).

SUBJECT TO: General Conditions 1-14 and Specific Conditions 1-32.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, F.S. The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.
2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.
3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in the permit.
4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.
5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.
6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.
7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:
 - (a) Have access to and copy any records that must be kept under the conditions of the permit;
 - (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
 - (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules. Reasonable time may depend on the nature of the concern being investigated.
8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in the permit, the permittee shall immediately notify and provide the Department with the following information:
 - (a) A description of and cause of noncompliance; and
 - (b) The period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

GENERAL CONDITIONS:

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department, may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Sections 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rule 17-4.120 and 17-30.300, F.A.C., as applicable. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. The permittee shall comply with the following :

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically, unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit, records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit.

These materials shall be retained at least three years from the date of the sample, measurement, report or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:

- the date, exact place, and time of sampling or measurements;
- the person responsible for performing the sampling or measurements;
- the date(s) analyses were performed;
- the person responsible for performing the analyses;
- the analytical techniques or methods used; and
- the results of such analyses.

14. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be submitted or corrected promptly.

PERMITTEE:
Mr. James S. Jenkins, III
Rinker Material Corporation
Miami, Florida 33265-0000

I.D. NUMBER: 50/DAD/13/0014
PERMIT/CERTIFICATION NUMBER: AO 13-234126
DATE OF ISSUE: SEP 21 1993
EXPIRATION DATE: September 17, 1998

SPECIFIC CONDITIONS:

1. Issuance of this permit does not relieve the permittee from complying with applicable emission limiting standards or other requirements of Chapter 17-296 and 17-297, F.A.C., or any other requirements under federal, state, or local regulations. The permittee is also required to comply with F.A.C. Rule 17-775 and any applicable county regulation which may include requirements for a county operation permit.
2. The stack sampling facilities must comply with Rule 17-297.345, F.A.C.
3. The facility shall be equipped with a means to measure the pressure drop across the particulate matter air pollution control device and continuous emissions monitors and recorders for hot zone temperature and carbon monoxide concentration (Rule 17-296.415(1)(c), F.A.C.).
4. Particulate matter (PM) and lead emissions from the dryer shall not exceed any of the following limits (Based on data in the application and Rule 17-296.415(2)(b), F.A.C.):
 - (A) 0.04 grains PM per dry standard cubic foot.
 - (B) 3.3 pounds PM per hour (max.), 1.0 pounds PM per hour (avg.).
 - (C) 4.38 tons PM in any 12 consecutive month period.
 - (D) 0.13 pounds lead per hour.
5. Particulate matter emissions from the fugitive dust baghouse shall not exceed 0.02 grains/dscf, nor 0.5 lbs/hr. Visible emissions from any part of the process shall not exceed 5 percent opacity.
6. Carbon monoxide emissions shall not exceed 100 parts per million by volume, dry, during any 60 consecutive minute period (Rule 17-296.415(1)(b), F.A.C.).
7. Visible emissions from the afterburner stack shall not exceed 5 percent opacity (Rule 17-296.415(2)(a), F.A.C.).
8. Reasonable precautions shall be taken to minimize uncontrolled particulate matter emissions (Rule 17-296.310, F.A.C.). These provisions are applicable to any source, including vehicular movement, transportation of materials, and industrial related activities such as loading, unloading, storing, and handling. Before and after thermal soil treatment is accomplished, unconfined emissions of particulate matter from the soil shall be controlled by the application of water and/or containment (Rule 296.415(3), F.A.C.).

PERMITTEE:
Mr. James S. Jenkins, III
Rinker Material Corporation
Miami, Florida 33265-0679

I.D. NUMBER: 50/DAD/13/0014
PERMIT/CERTIFICATION NUMBER: AO 13-234126
DATE OF ISSUE: SEP 21 1993
EXPIRATION DATE: September 17, 1998

SPECIFIC CONDITIONS:

9. Operation of this facility shall not result in the emissions of air pollutants which cause or contribute to an objectionable odor (Rule 17-296.320, F.A.C.).
10. The system shall be properly operated and maintained (F.A.C. Rule 17-210.300(2)). No person shall circumvent any pollution control device or allow the emissions of air pollutants without the applicable air pollution control device operating properly (F.A.C. Rule 17-210.650). The afterburner must be in service any time the stone dryer is used to decontaminate soil. The use of the afterburner is not required when the dryer is used to dry stone. In case of excess emissions resulting from a malfunction, the permittee shall notify the Dade County Department of Environmental Resources Management and the Department's Southeast District Office within 1 working day of the cause and duration of the upset. If requested, the permittee shall submit a full written report on the malfunction (Rule 17-210.700, F.A.C.).
11. The facility shall only treat petroleum contaminated soil as defined in F.A.C. Rule 17-775.200(9), (F.A.C. Rule 17-296.415), whose metal concentrations do not exceed the limits shown in Table I of F.A.C. Rule 17-775.400(3).
12. Soil containing more than 1.4 percent petroleum (daily average) products shall not be treated in this facility unless it is processed at a rate less than 40 TPH and potential VOC emissions do not exceed 22.8 pounds per hour.
13. This facility may treat polychlorobiphenol (PCB) contaminated soil. Any soil containing PCB must meet all the requirements of F.A.C. Rule 17-775.410(6). The permittee shall maintain a log that shows the PCB content of any soil containing used oil, hydraulic oil, and/or mineral oil; the source of the PCB contaminated soil; the tons of PCB contaminated soil treated; the PCB content of the oil that contaminated the soil; the quantity of PCBs in each batch of soil that is treated; and the total amount of PCBs treated during the preceding 12 month period. Emissions of PCBs from the stack shall not exceed 154 pounds in any consecutive 12 month period. The cumulative weight of emissions shall be calculated using either of the following methods:
 - (a) The weight of PCBs entering the kiln shall be assumed to be the weight emitted.
 - (b) The weight of emission shall be calculated using the weight entering the kiln with adjustment for documented destruction in the facility by a test program conducted by the permittee that is approved by the Department.

Method (a) shall be used until a destruction rate has been established on this system by stack test. Test protocol and methods to be used in determining destruction efficiency shall be submitted to the Department for approval. Method (b) shall not be used until the test results have been reviewed and accepted by the Department.
14. The input rate of petroleum contaminated soil to the facility shall not exceed 40 tons per hour. Material entering the kiln cannot be larger than 2 inches in diameter. The permittee shall have the means of determining feed or production rates of the facility on site.
15. The unit shall not be operated in a manner that creates a nuisance.

PERMITTEE:
Mr. James S. Jenkins, III
Rinker Material Corporation
Miami, Florida 33265-0679

I.D. NUMBER: 50/DAD/13/0014
PERMIT/CERTIFICATION NUMBER: AO 13-234126
DATE OF ISSUE: SEP 21 1993
EXPIRATION DATE: September 17, 1998

SPECIFIC CONDITIONS:

16. This unit shall be allowed to operate continuously, 24 hours per day, 7 days per week, 52 weeks per year.
17. The input of petroleum contaminants in the soil into the facility shall not exceed 1120 pounds per hour (daily average).
18. The dryer is authorized to burn up to 27.4 MM Btu/hr of waste oil (193 GPD) containing a maximum of 0.4 percent sulfur and 500 ppm lead, No. 2 distillate oil (193 GPH) containing a maximum of 0.5 percent sulfur, and propane (180 CFM)/or natural gas (460 CFM). The maximum fuel oil consumption shall not exceed 769,459 gallons in any 12 month period.
19. The fume incinerator (afterburner) is authorized to burn up to 15.0 MM Btu/hr of natural gas (250 CFM) or propane (100 CFM). The fume incinerator shall be in service any time the stone dryer is being used to process material containing contaminated soil. The by-pass stack must be closed when the unit is processing contaminated soil.
20. Contaminated soil shall not be treated by the facility unless the afterburner is operating at a minimum temperature of 1600 degrees Fahrenheit, and a minimum retention time of 0.5 seconds. If the permittee can document that the retention time of the flue gases in the afterburner is 1 second or more, the afterburner temperature may be reduced to 1500° F (Rule 17-296.415(1)(a), F.A.C.).
21. All emission monitoring equipment shall be properly installed, calibrated, operated, and maintained in accordance with the manufacturer's requirements for that instrument.
22. Pressure drop across the particulate matter air pollution control device shall be recorded hourly and the temperature and carbon monoxide concentration of the hot zone shall be recorded continuously (Rule 17-296.415(1)(c), F.A.C.).
23. Use of the existing cement kiln to decontaminate soil shall cease when the stone dryer begins operation as a soil decontamination unit.
24. The Southeast District and Dade County Department of Environmental Resources Management shall be notified in writing at least 15 days in advance of any formal compliance test to be conducted on this facility. The notification shall give the date, time, place, and contact person for the test (Rule 17-297.340(1)(i), F.A.C.).
25. Any test data submitted with an application for permit to operate (every 5 years) shall include analysis of the filter and impinger catch for arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver along with similar analysis of the contaminated and treated soil processed during the test.
26. Compliance tests results shall be submitted to the Southeast District and Dade County within 45 days of the test.

PERMITTEE:
Mr. James S. Jenkins, III
Rinker Material Corporation
Miami, Florida 33265-0679

I.D. NUMBER: 50/DAD/13/0014
PERMIT/CERTIFICATION NUMBER: AO 13-234126
DATE OF ISSUE: SEP 21 1993
EXPIRATION DATE: September 17, 1998

SPECIFIC CONDITIONS:

27. When the Department, after investigation, has good reason to believe that any applicable emission standard or condition of this permit is being violated, it may require the owner or operator of the facility to conduct compliance tests which identify the nature and quantity of pollutant emissions from the plant and to provide a report on the results of said tests to the Department (Rule 17-297.340(2), F.A.C.).
28. The permittee shall maintain a daily log that shows the date, operation time, pressure drop across the PM control device, processing rate, type and quantity of fuel consumption in the dryer and afterburner, and operation problems. These records shall be maintained for a minimum of 3 years.
29. The permittee shall maintain a file of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements, all continuous monitoring system or performance evaluations, all continuous monitoring system or monitoring device calibration checks, adjustments and maintenance performed on these systems or devices, all soil analysis required by Rule 17-775, F.A.C., and all other information required by rule or this permit, recorded in a permanent form suitable for inspection. The file shall be retained for at least 3 years following the date of such measurements, maintenance, reports, and records.
30. The permittee shall submit to Southeast District each calendar year, on or before March 1, an annual operation report for this facility for the preceding calendar year containing at least the following information pursuant to Subsection 403.061(13), F.S.:
 - (a) Annual amount of material and/or fuels utilized.
 - (b) Annual emissions (note calculation basis).
 - ~~(c) Annual hours of operation.~~
 - (d) Any changes in the information contained in the permit.
 - (e) All compliance test reports for the preceding year.
 - (f) Temperature and CO exceedance reports for the year.
31. The permittee may request, in writing, that the permit(s) for this facility be modified to authorize the treatment of materials not meeting the specifications in F.A.C. Rule 17-775. The request to the Division of Air Resources Management shall include the appropriate processing fee for a modification, the history of the soil to be treated, an analysis of the contaminants suspected to be in the soil, an estimate of the emissions from the unit while processing the soil, and calculations showing that the ambient air impact from the unit will not exceed the Air Toxic Reference Concentration for any toxic pollutant. Public notice may be required by the Department as part of the review to modify the permit(s). The Department will approve or deny each request in writing on a case-by-case basis.

PERMITTEE:

Mr. James S. Jenkins, III
Rinker Material Corporation
Miami, Florida 33265-0679

I.D. NUMBER: 50/DAD/13/0014

PERMIT/CERTIFICATION NUMBER: AO 13-234126

DATE OF ISSUE: SEP 21 1993

EXPIRATION DATE: September 17, 1998


SPECIFIC CONDITIONS:

32. The Permittee shall be aware of and operate under the attached "General Permit Conditions Numbers 1 thru 14". General Permit Conditions are binding upon the Permittee and enforceable pursuant to Chapter 403 of the Florida Statutes.

Executed in West Palm Beach, Florida.

STATE OF FLORIDA

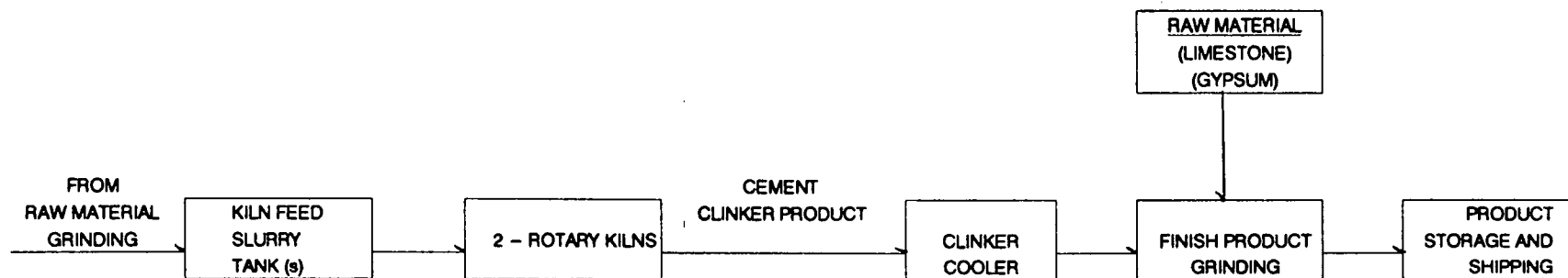
DEPARTMENT OF ENVIRONMENTAL PROTECTION



for Mary E.S. Williams
Director of District Management

MESW:nk:ms

PROCESS FLOW DIAGRAM PAGE 2



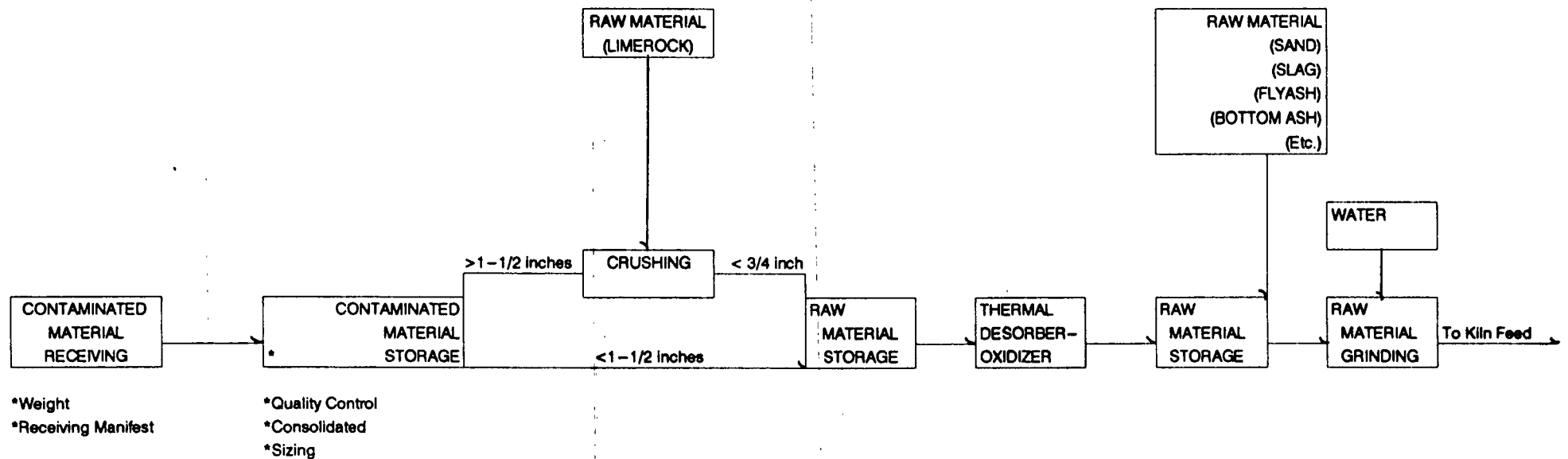
*Product Exit Temp - + 2800 F

*Product Retention - 3 hr min.

*Physical & Chemical Transition

PROCESS FLOW DIAGRAM

PAGE 1



LEACHATE COLLECTION SYSTEM

Rinker is requesting a modification to our general permit to move the leachate collection system currently located inside the Southeast corner of our Materials storage building. This system will be relocated outside the building, approximately fifteen feet from the southeast corner of the slag and abutted to the main building slab. The tank will be downsized to a 2000 gallon tank (previously utilized at the temporary soils storage pad) and located within a concrete containment system built to contain 130% of the size of the tank. This the piping from the material storage building to the tank/containment system will be constructed of double walled piping. These details are outlined on the attached construction print.

The purpose for this request is based on two reasons. Since this system went into operation in February 1992 Rinker has had no occasion to put contaminated waters into this tank. This is after two wet seasons. This tank when the building is empty is difficult to operate around with the loaders in the building. The tank is difficult to inspect and keep clear when inventory levels increase within the building.

By relocating the tank outside we will not have problems with equipment working around the tank, inventories encroaching on the tank, and inspections will be much more readily made.

If it ever becomes necessary to put waters into this tank Rinker would still utilize them in our process as described in the original permit.

PCB CONTAMINATED SOILS

Rinker is providing the following notice of intent in compliance with Rule 17-775.410(6)

Rinker intends to treat low levels of PCB contaminated soils in compliance with Rule 17-775, General Permit No. S013-195017 and Air permit number AO 13-234126 (attached).

The descriptions below address the questions required by this notice.

1. Describe the types of finished product line for which the soil will be used following treatment.

All of the PCB soils after treatment will be included in the portland cement manufacturing process.

2. A sample of the record keeping forms for PCB analytical information, tracking the PCB contaminated soil which the facility accepts, and record keeping the type of finished product line for which the soil contaminated with PCB,s is used shall be attached.

Rinker utilizes the Florida Department of Environmental Protection Untreated Soil Reporting Form and Treated Soil Reporting form to meet the above requirements. See Attachment

3. A narrative description should be provided of the procedure which will be followed to separately handle and stockpile the PCB contaminated soil both before and after treatment. It must be demonstrated that the facility has adequate storage facilities to accommodate the separate handling of PCB contaminated soil, both before and after thermal treatment.

To prevent the intrusion of the weather element, a pre-treatment soils storage area consists of a steel building erected to enclose a concrete walled 110 foot by 306 foot monolithic (12 inch thick) reinforced concrete slab. This building is open on one side allowing access for handling equipment and truck entry and egress along any point of the open face.

The size and easy access of this facility allows Rinker to easily segregate low level PCB contaminated soils from other contaminated materials within the building. This is also accomplished thru scheduling of materials receipts to insure the adequacy of space available. Screening and any sizing of these materials will also be processed independently of any other materials on site.

PCB CONTAMINATED SOILS

When screened and sized these materials will be moved to the feed area for the thermal desorber for treatment. They will be processed independently of any other materials. After treatment these soils will be used in the cement manufacturing process as raw materials and will in fact be passed thru a second pyroprocessing operation when converted to clinker.

4. Soil sampling and analysis.

Rinker Materials will require the generator of low level PCB contaminated soils to precertify these materials thru the sampling and analysis requirements specified in 17-775.410. Rinker will accept these materials only after the provisions are met.

5. Alternate procedure.

Rinker will continue to comply with the existing approved alternate procedure dated April 1, 1991.

DRUMMED MATERIALS

Rinker is handling drummed materials in the following manner. These petroleum contaminated materials are of the same nature and type as those received in bulk. The pre-certification is the same for drummed materials as for bulk materials. When properly approved for receipt and received these materials are emptied within our 110 foot by 306 foot materials storage building for standard processing.

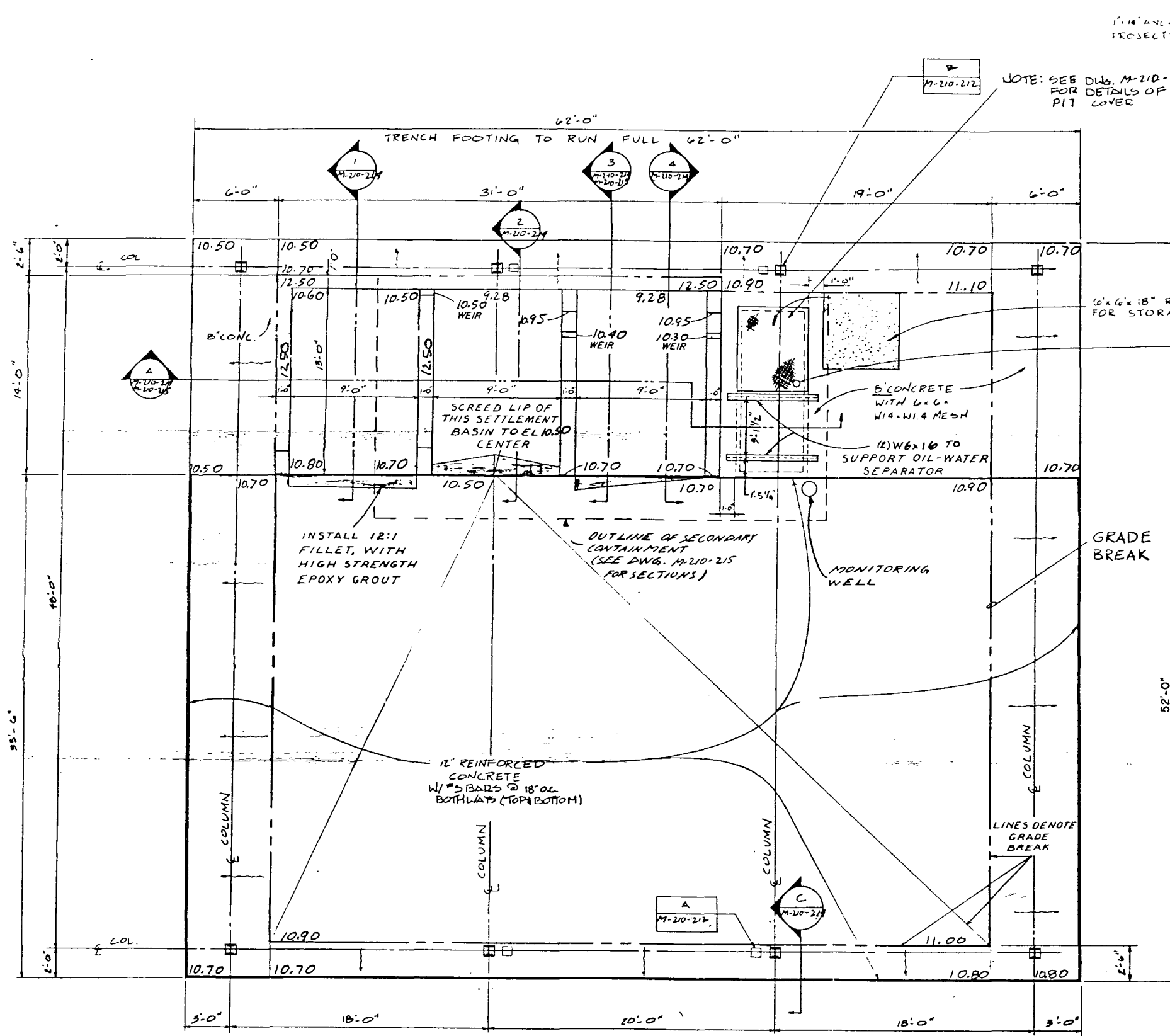
When emptied these drums are moved by flatbed truck (owned and operated by Rinker Materials) to our pressure washing facility. At this totally self contained facility the drums have residual petroleum contaminated materials removed. Then depending on the condition of the drum one of two things happens. If undamaged, the drums are transported to a steel drum facility (currently Southern Steel Drum). If damaged the drum is crushed and transported to a scrap steel recycling facility (currently Miami Iron and Metal Scrap).

The residual contaminated materials collected in this facility are utilized in our process. Contaminated soils are moved to the soils storage building for processing. Water and oil are moved to our oily water system for inclusion in the kiln process and oil is moved into our oil system to be fuel for our kilns.

The self contained cleaning facility was constructed and went into operation in September 1987. This facility was constructed with an integral secondary containment system located underneath the main building to contain any leakage from the primary facility should it ever occur, with a monitoring well included. This monitoring well has a sample visually checked monthly. A sample will be tested for VOC's. This reclaim system for pressure cleaning operations is located with a roofed building including two collection pits, an aeration/settling pit, oil/water separator, and a 2000 gallon aboveground recycled water tank. With sloped floor and collection bins all materials stay within the facility until properly moved for recycling into our process.

Attached are copies of the original construction prints and certificate of completion of construction. This facility is currently listed on our Dade County IW2-0289-93.

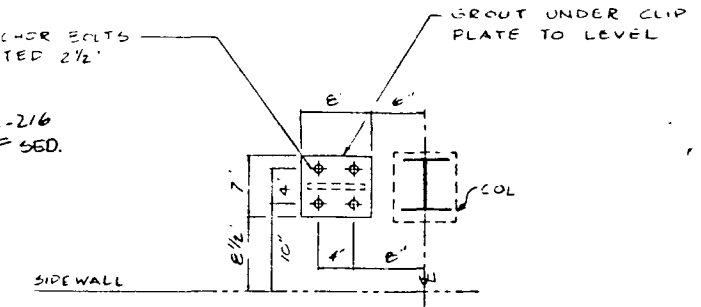
RECEIVED
JUN 7 1996
DEPT OF ENV PROTECTION
WEST PALM BEACH



PLAN VIEW
SCALE: 1/4"=1'-0"

1" ANCHOR BOLTS PROJECTED 2 1/2"

NOTE: SEE DWG. M-210-216 FOR DETAILS OF SED. PIT COVER

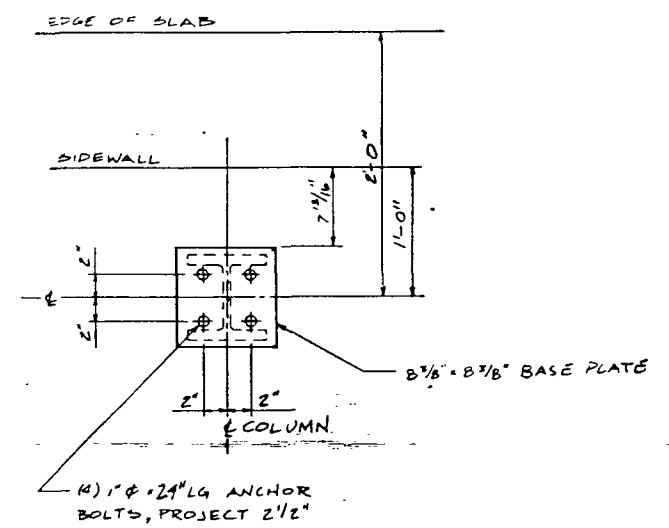


A BRACE ROD CLIP - 2 REQ'D
SCALE: NTS
(2 REQ'D OPPOSITE HAND)

6" x 6" x 18" RAISED PAD FOR STORAGE TANK

2" GALV THREADED PIPE COUPLING WELDED TO GRATE

IMPORTANT NOTE:
SLAB TO SLOPE MIN. OF .2" FROM GRADE BREAK TO OUTSIDE PERIMETER OF SLAB.



B COL. BASE DETAIL - TYPICAL (8 PLACES)
SCALE: 1 1/2"=1'-0"

CONSTRUCTION PRINT
Released For Construction
DESTROY ALL OLD PRINTS
Date: By: RINKER MATERIALS CORP.

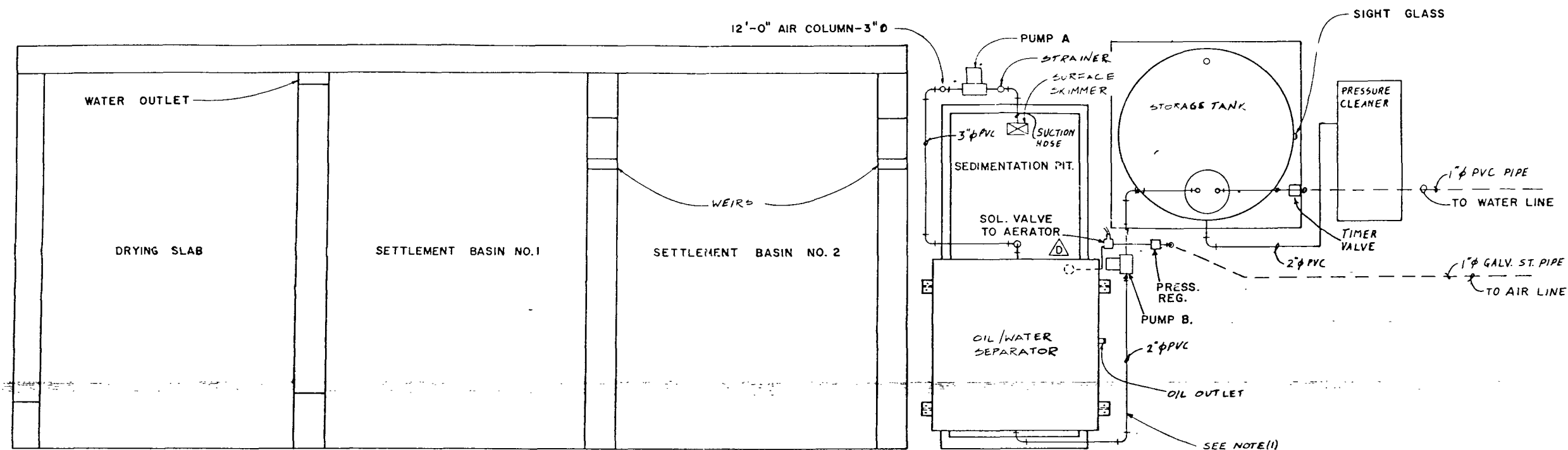
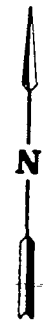
NOTES
f_c = 3000 P.S.I. IN 28 DAYS.
f_y = 60,000 PSI FOR REBAR.
f_y = 36,000 PSI FOR STRUCTURAL STEEL.

NOV 24 1986

M-210-212

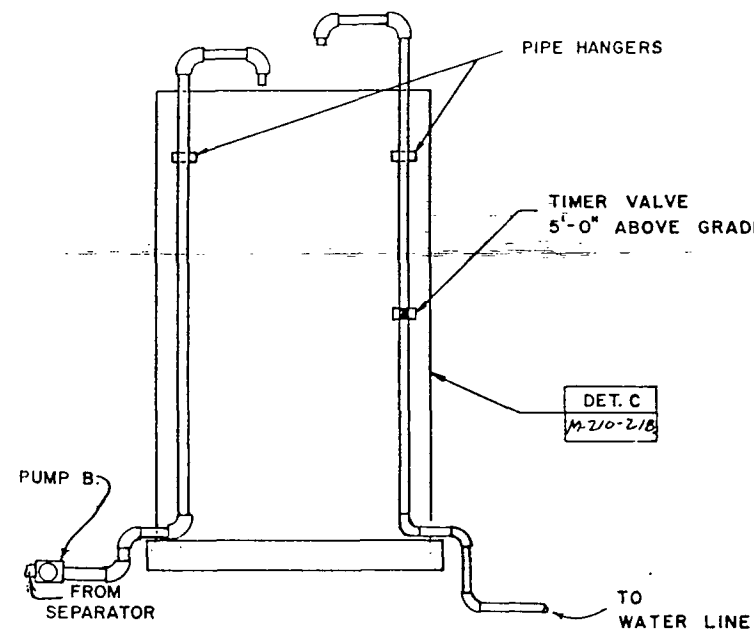
REVISED			RINKER MATERIALS CORP & SUBSIDIARIES WEST PALM BEACH, FL	
DATE	REMARKS	INITIAL	SCL QUARRY	
5/15/86	GEN. REV.	N.A.	PRESSURE CLEANING PAD SLAB LAYOUT	
DRAWN BY NICK A.			DRAWING NO. M-210-212	
DATE 5/15/86			SHEET	
CHECKED BY				
DATE				

M-210-212



SCALE: N.T.S.

PUMP AND EQUIPMENT SCHEDULE (NEW)							
MARK	MANUFACTURER	MODEL	MOTOR VOLTAGE	MOTOR R.P.M.	OUTLET	INLET	REMARKS
PUMP A	GORMAN RUPP	9D-B	3 Ø 480 V	1260	3" NPT	2" NPT	
PUMP B	LANCASTER	904 (3/4 HP)	3 Ø 480 V	3450	1 1/2" NPT	1 1/2" NPT	
OIL/WATER SEPARATOR	AFL INDUSTRIES	VTC 50A			2" Ø FLANGED	3" Ø FLANGED	
SURFACE SKIMMER	AFL INDUSTRIES	FS-1/506PM			2" Ø HOSE		
STRAINER	HAYWARD	IN LINE #30			2" NPT	2" NPT	
PRESSURE CLEANER	ALKOTA CLEANING SYS	22000	3 Ø 980V			1/2" NPT (F)	
TIMER VALVE	MC MASTER-CARR	7763 K16			1" NPT (F)	1" NPT (F)	
PRESS. REG.	NORGREN	R17-800 RGLA			1" NPT. F.	1" NPT. F.	ADJUST TO 20 P.S.I.
SOL. VALVE	ASCO	EP8211B27	120V60Hz		1" NPT. F.	1" NPT. F.	125 P.S.I., AIR.
SUCTION HOSE		2 1/2" OIL SUCT.					8'-0" IN LENGTH



NOTE: 1) ALL PIPING TO BE FASTENED TO CONCRETE SLAB EVERY 8'-0" AND AT CORNERS
2) ALL PUMP MOTORS TO BE TOTALLY ENCLOSED FAN COOLED

CONSTRUCTION PRINT
Released For Construction
DESTROY ALL OLD PRINTS
Date: _____ By: _____
RINKER MATERIALS CORP.

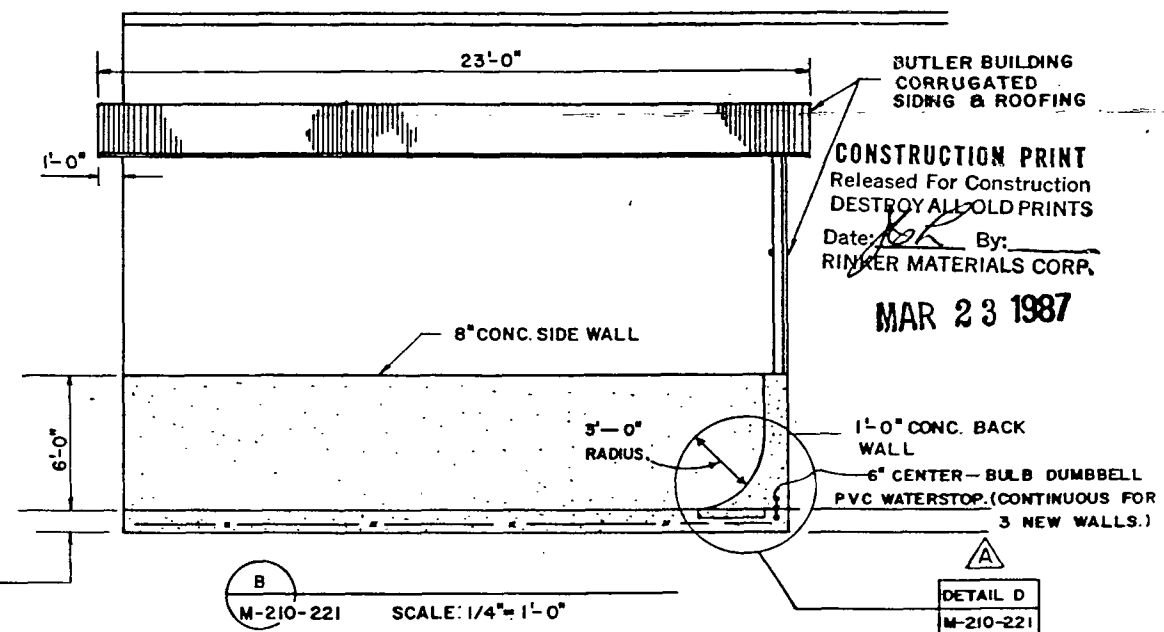
NOV 24 1986

(WEST EL) STORAGE TANK
SCALE: N.T.S.

M-210-217

REVISED			RINKER MATERIALS CORP & SUBSIDIARIES	
DATE	REMARKS	INITIAL	WEST PALM BEACH, FL	
11/24/86	GEN. REV.	GAU	SCL QUARRY	
			—PRESSURE CLEANING PAD—	
			PUMPS AND PIPING	
			DRAWN BY NICK A.	
			DATE 5/15/86	
			CHECKED BY	
			DATE	
			DRAWING NO. M-210-217	
			SHEET	

M-210-217



NOTES:

**BUTLER BUILDING SUPPLIED
BY NEWCO STRUCTURES INC.**

THIS AREA TO BE BLOCKED
OUT OF SLAB POUR WITH (2)
2" x 6", OR (3) 2" x 4" BOARDS.

3'-0" RADIUS

6 x 6 10/10 MESH W/ 1 1/2" COVER.

6" CENTERBULB DUMBELL P.V.C. WATERSTOP.

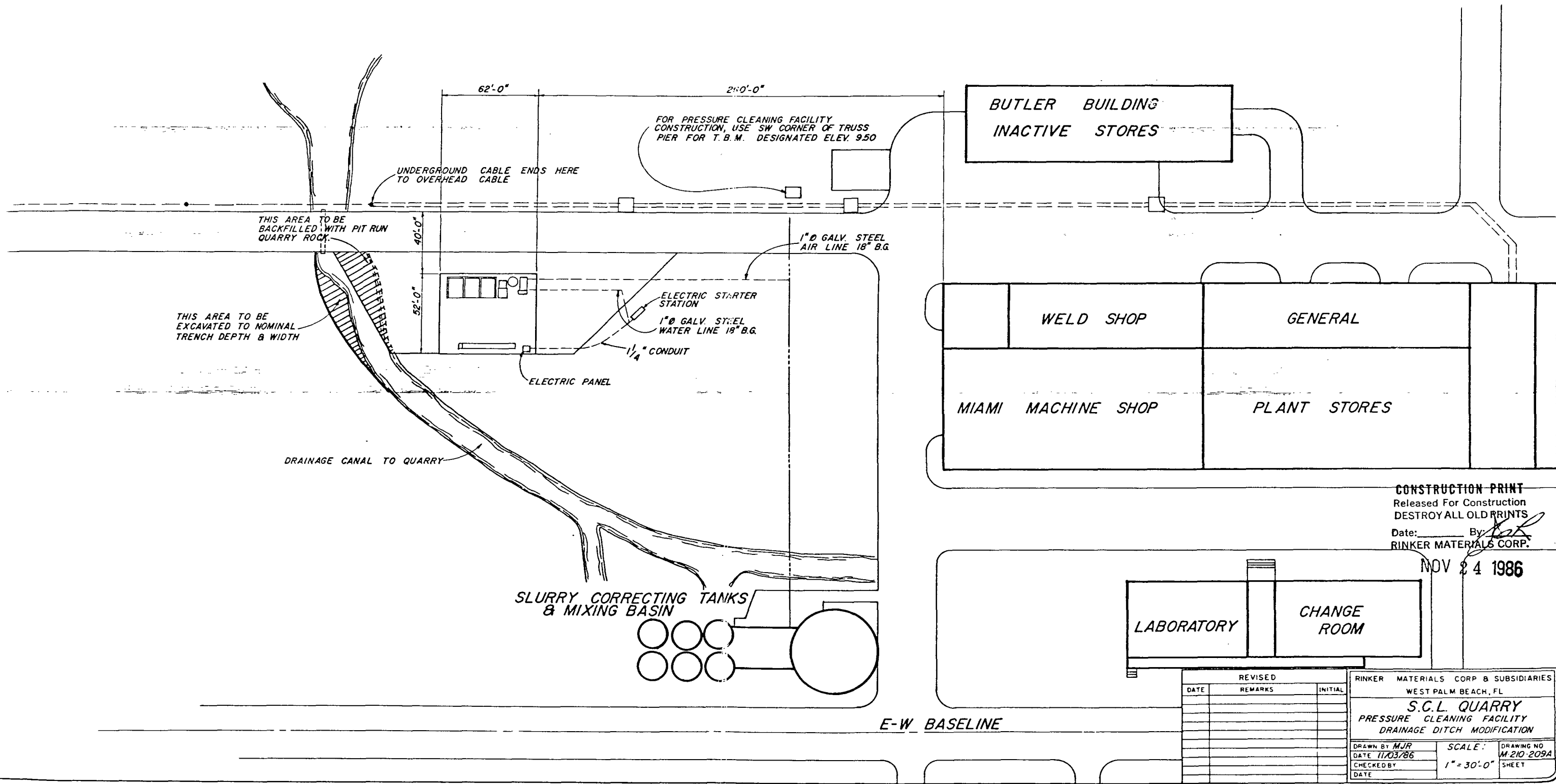
1-0" CONC. SLAB
w/6x6 10/10 MESH

CONSTRUCTION PRINT
Released For Construction
DESTROY ALL OLD PRINTS
Date: 10/2 By:
RINKER MATERIALS CORP.

MAR 23 1987

1'-0" CONC. BACK WALL
6" CENTER - BULB DUMBBELL
PVC WATERSTOP. (CONTINUOUS FOR
3 NEW WALLS.)

REVISED			RINKER MATERIALS CORP & SUBSIDIARIES	
DATE	REMARKS	INITIAL	WEST PALM BEACH, FL	
2-28-87	GENERAL REVISIONS.	F.R.	S.C.L QUARRY	
			— PRESSURE CLEANING FACILITY —	
			SLUDGE STORAGE BUILDING	
			DRAWN BY PGBRAZIER	DRAWING NO
			DATE 1-24-87	M-210-221
			CHECKED BY	SHEET
			DATE	



CONSTRUCTION PRINT

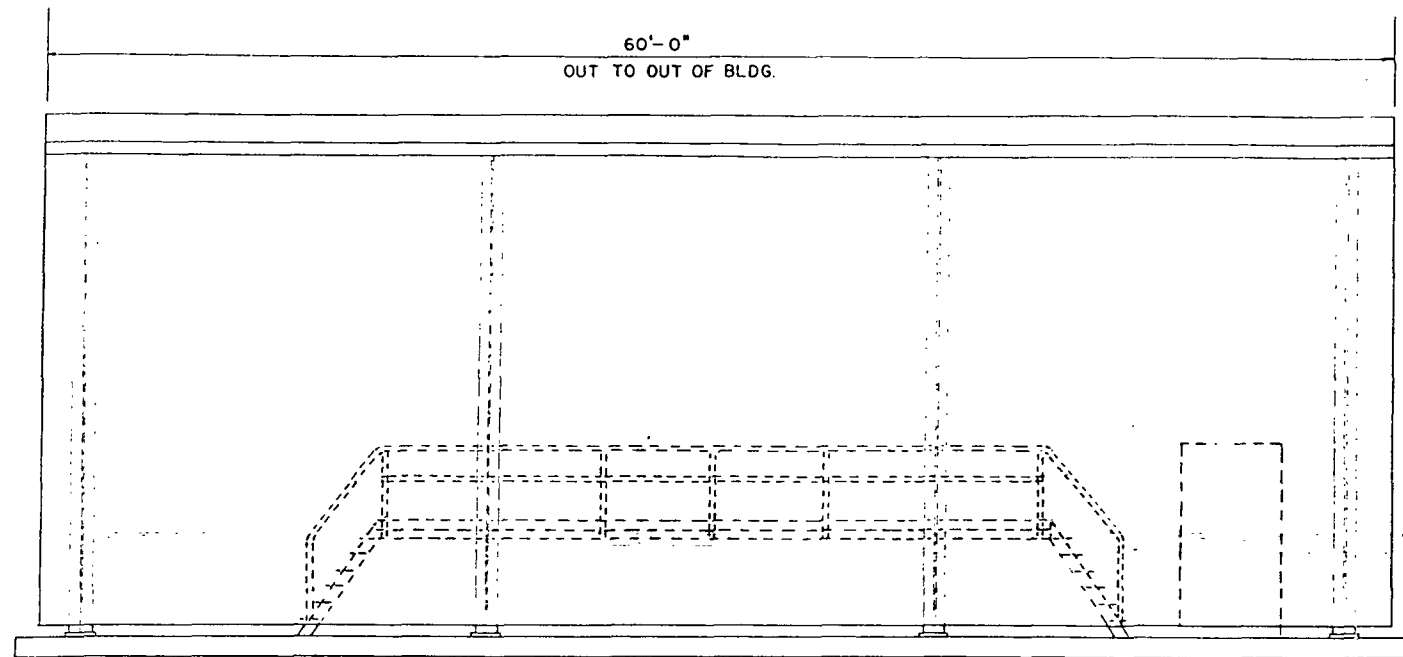
Released For Construction
DESTROY ALL OLD PRINTS

Date: _____ By: *[Signature]*
RINKER MATERIALS CORP.

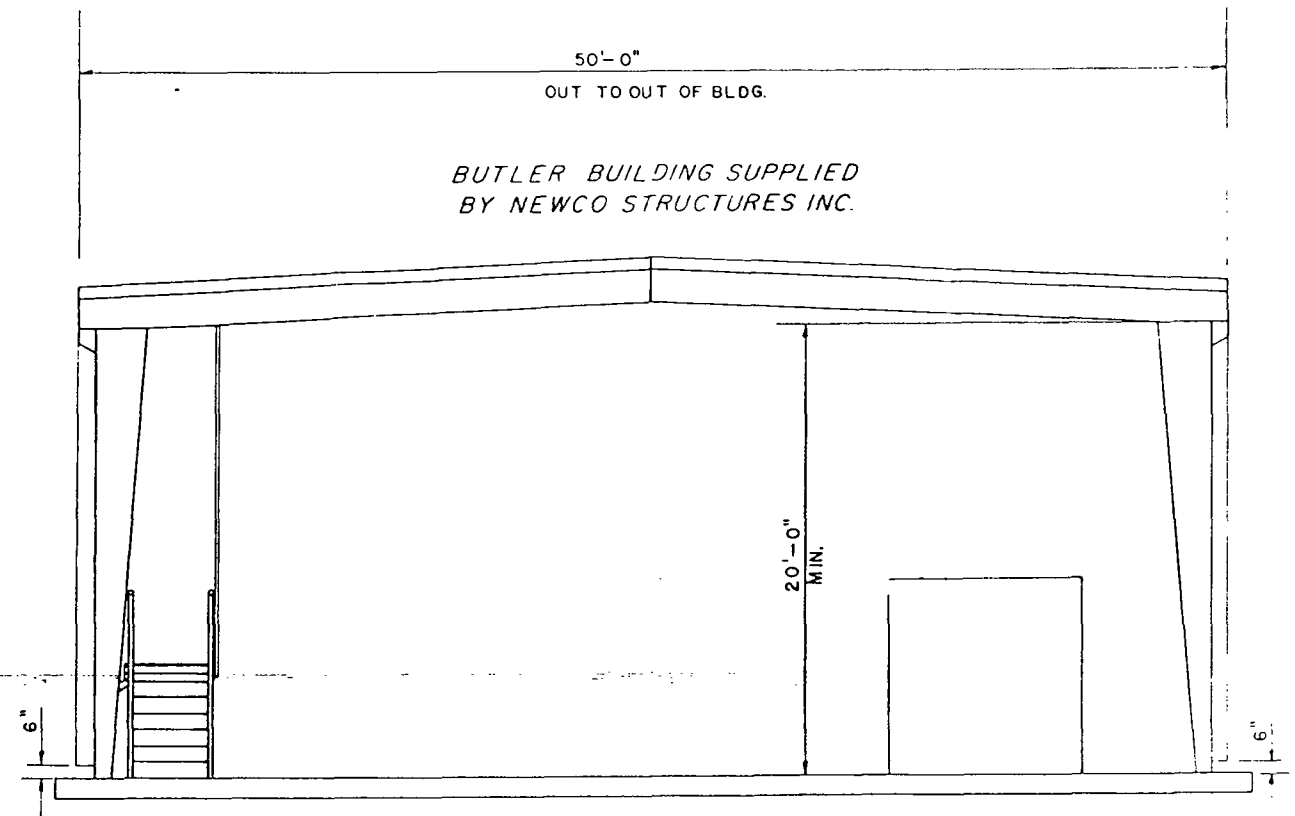
NOV 24 1986

REVISED		
DATE	REMARKS	INITIAL

RINKER MATERIALS CORP & SUBSIDIARIES WEST PALM BEACH, FL		
S.C.L. QUARRY PRESSURE CLEANING FACILITY DRAINAGE DITCH MODIFICATION		
DRAWN BY MJR	SCALE: 1" = 30'-0"	DRAWING NO. M-210-209A
DATE 11/03/86		SHEET
CHECKED BY		
DATE		



WEST PROFILE
SCALE 1/4"=1'-0"



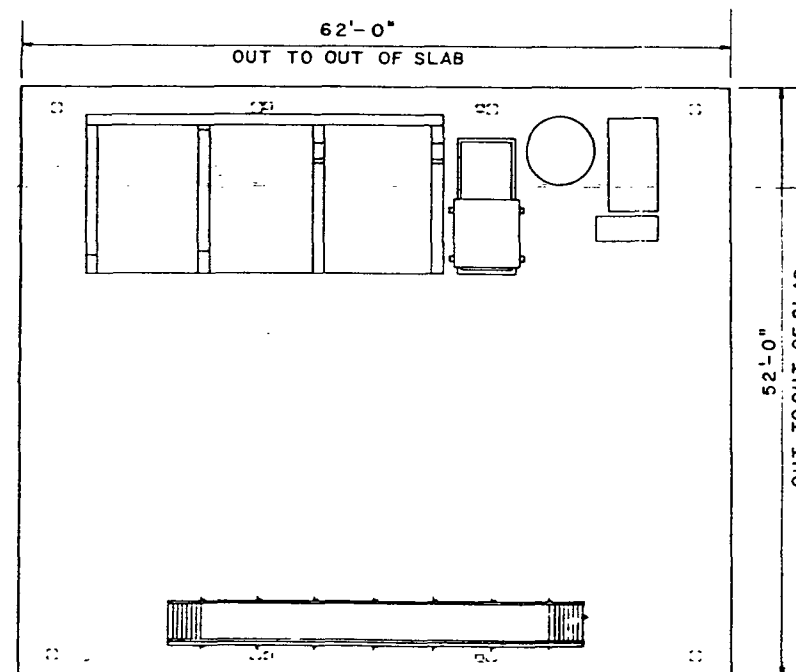
SOUTH PROFILE
SCALE 1/4"=1'-0"

NOTE.

- 1) SEE DWG. M-210-209 FOR LAYOUT & SITEWORK.
- 2) SEE DWG. M-340-704 FOR ELECTRICAL LAYOUT
- 3) SEE DWG. M-340-501 FOR UTILITIES
- 4) SEE DWG. M-340-703 FOR ELECTRICAL SCHEMATIC

DWG. LIST

M-210-209	LAYOUT
M-210-209A	DRAINAGE DITCH MODIFICATION
M-210-210	PLAN & PROFILE
M-210-211	FLOW DIAGRAM
M-210-212	SLAB LAYOUT
M-210-213	STRUCTURAL SECTIONS
M-210-214	CATWALK DETAILS
M-210-215	SECONDARY CONTAINMENT
M-210-216	MISC. DETAILS
M-210-217	PUMPS & PIPING
M-210-218	PIPING DETAILS
M-210-219	PLUMBING DETAILS
M-210-220	MOBILE CATWALK
M-340-494	POWER SCHEMATIC
M-340-501	CONDUIT LAYOUT
M-340-505	ELECTRIC
M-340-702	ELECTRIC DETAILS
M-340-703	ELECTRIC DETAILS
M-340-704	ELECTRIC LAYOUT



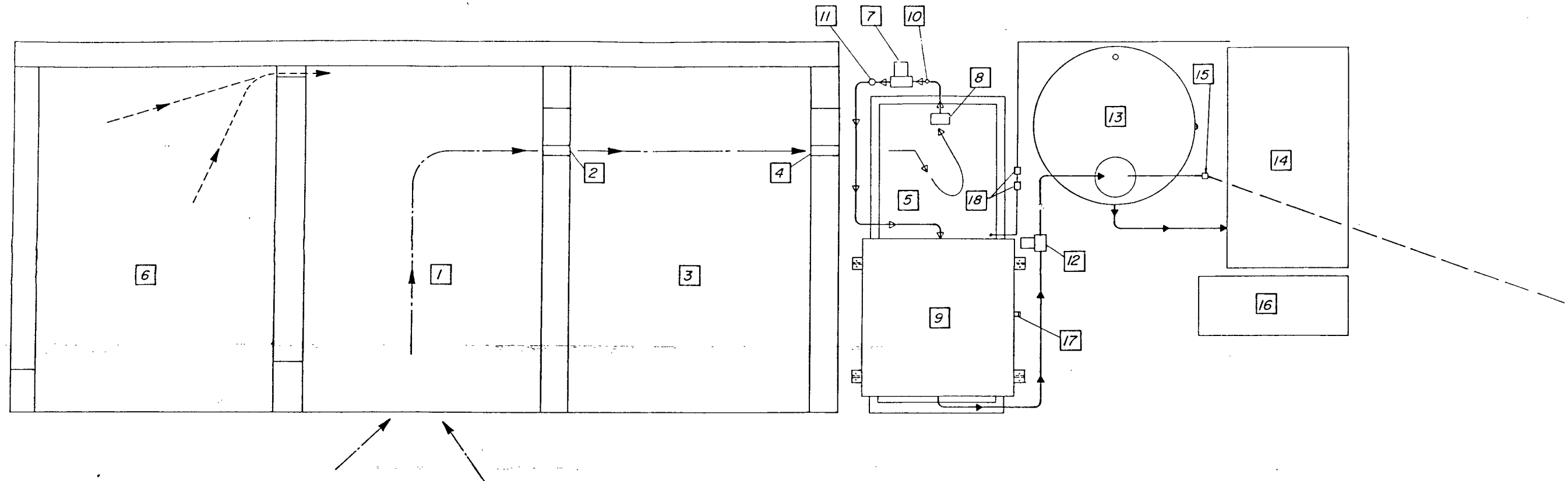
PLAN VIEW
SCALE 1/8"=1'-0"



CONSTRUCTION PRINT
Released For Construction
DESTROY ALL OLD PRINTS
Date: _____ By: *[Signature]*
RINKER MATERIALS CORP.
NOV 24 1986

REVISED			RINKER MATERIALS CORP & SUBSIDIARIES	
DATE	REMARKS	INITIAL	WEST PALM BEACH, FL	
			SCL QUARRY	
			PRESSURE CLEANING PAD	
			PLAN AND PROFILE	
			DRAWN BY: <i>NICK A.</i>	DRAWING NO.
			DATE: 5/14/86	M-210-210
			CHECKED BY:	SHEET
			DATE:	

M-210-210



STEAM CLEANING SYSTEM FLOW SEQUENCE

As the trucks are cleaned the water-sludge oil-mixture flows into [1] SETTLEMENT BASIN #1, where the heaviest sediment can settle to the bottom. The excess oily water flows over [2] WIER #1 to [3] SETTLEMENT BASIN #2. Settlement basin #2 allows additional settling before the excess oily water flows over [4] WIER #2 into the [5] SEDIMENTATION PIT. Whenever the sludge in the bottom of either of the basins reaches 3" below the bottom of the wier, the sludge should be removed to the [6] DRYING SLAB where excess water can flow back into the settlement basins.

The sedimentation pit accumulates the oily water runoff from steam cleaning during the day and allows additional settling at night. At 5:00 AM the timer activates the [7] SUMP PUMP, which removes the oily water from the sedimentation pit by means of a [8] SURFACE SKIMMER. The Sump pump is a diaphragm pump which is used so not to agitate the oily water which would emulsify the oil. The Sump pump pumps the oily water to the [9] OIL-WATER SEPARATOR and in the line a [10] FILTER is used to prevent trash from entering the separator and a [11] 12' AIR COLUMN is used to smooth the flow to the separator.

The oil-water separator has two compartments, one for the excess oil and oily water. The other is for the oil free water. The [12] STORAGE FEED PUMP pumps the oil free water from the separator to the [13] STORAGE TANK. The storage tank stores the oil free water for later use in the [14] STEAM CLEANER. The system will require makeup water periodically due to evaporation and the water should be added in the morning directly into the storage tank by means of the [15] TIMER VALVE.

The steam cleaner takes water directly from the storage tank as needed for steam cleaning. The steam cleaner also takes cleaning solution from the [16] CLEANING SOLUTION TANK as needed.

The excess oil in the separator is removed from the [17] OIL OUTLET and the oil is placed in the waste oil tank.

The air line to the aerator is controlled by the [18] solenoid valve and pressure regulator.

*Numbers in [] brackets indicate their location on the flow diagram.

CONSTRUCTION PRINT
Released For Construction
DESTROY ALL OLD PRINTS
Date: _____ By: _____
RINKER MATERIALS CORP.
NOV 24 1986

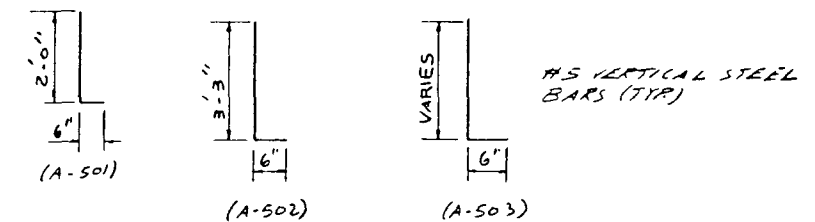
LEGEND

OILY WATER —————>
OIL-FREE WATER —————>
STEAM CLEANING SLUDGE —————>
WATER FROM DRY SLUDGE - - - - ->

M-210-211

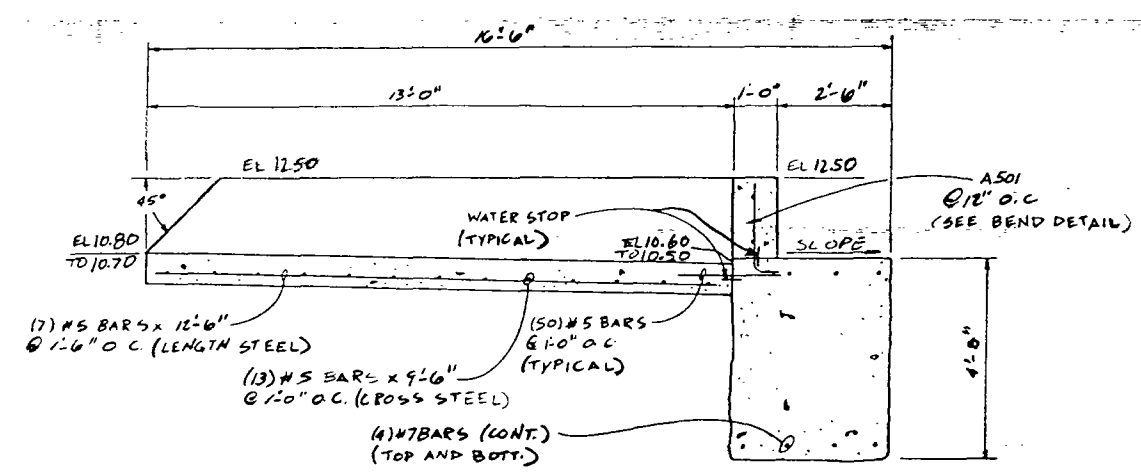
REVISED			RINKER MATERIALS CORP & SUBSIDIARIES	
DATE	REMARKS	INITIAL	WEST PALM BEACH, FL	
			SCL QUARRY	
			— PRESSURE CLEANING PAD —	
			FLOW DIAGRAM	
DRAWN BY NICK A.			DRAWING NO	
DATE 5/15/86			M-210-211	
CHECKED BY			SHEET	
DATE				

M-210-211

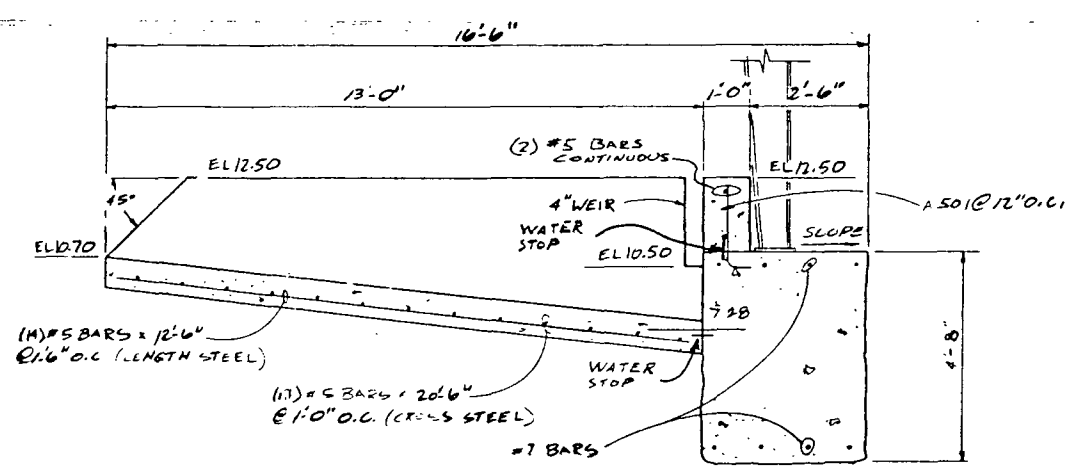


BEND DETAIL
(N.T.S.)

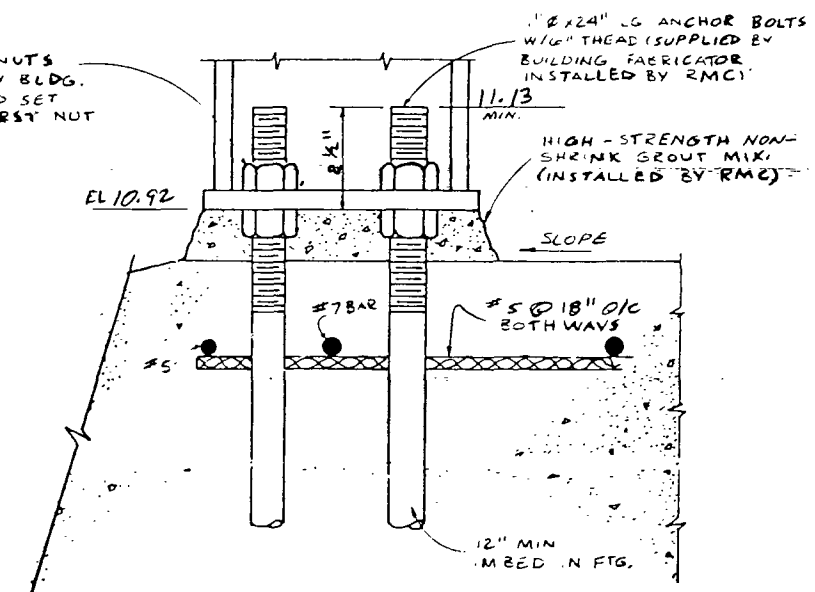
NOTE:
SEE M-210-216 FOR SED.
PIT COVER DETAILS.



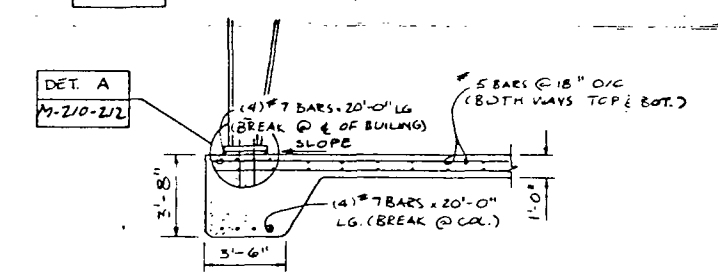
SECTION 1
M-210-212 SCALE: 1/2" = 1'-0"



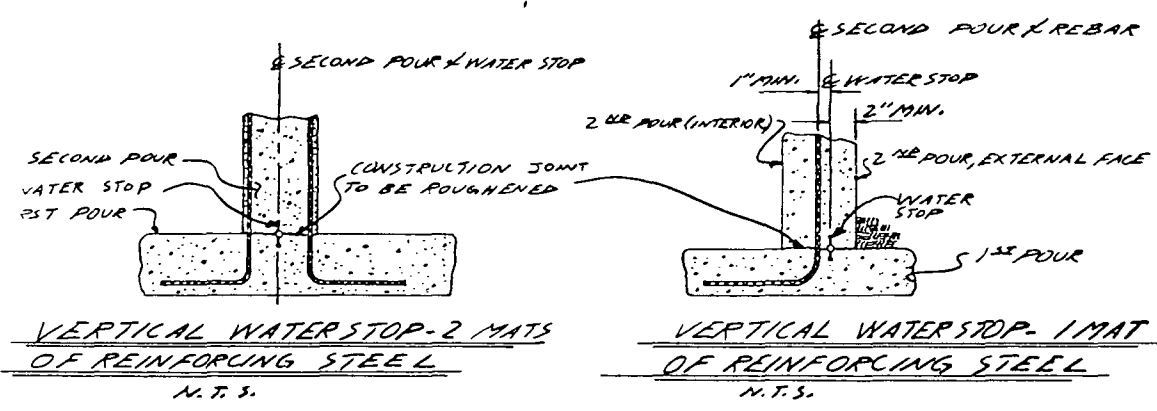
SECTION 2
M-210-212 SCALE: 1/2" = 1'-0"



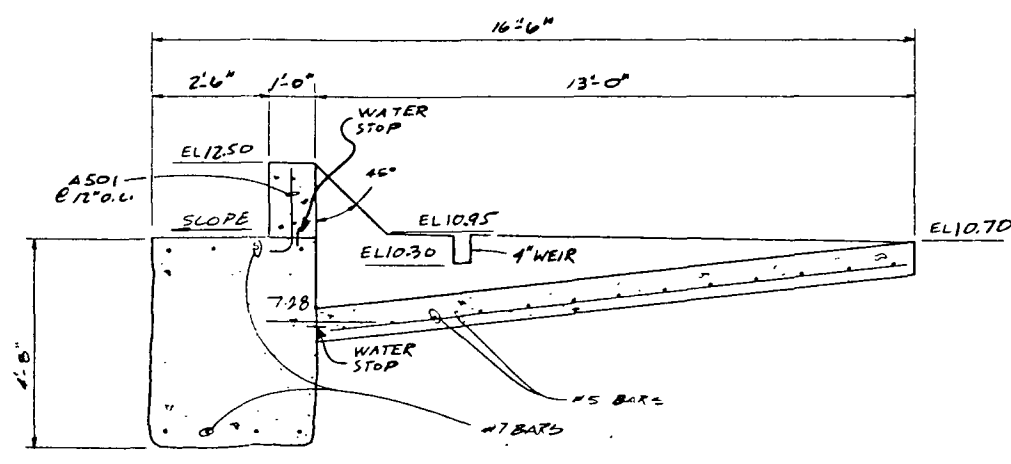
DET A ANCHOR BOLT DETAIL
M-210-212 SCALE: 3/16" = 1"



SECTION C CONSTRUCTION PRINT
M-210-212 SCALE: 1/4" = 1'-0"



NOTES:
1) SIMILAR DETAILS FOR HORIZONTAL WATER STOP.
FOR SINGLE MAT OF REINFORCING, INSTALL
WATER STOP BELOW POWEL'S,
2) CENTER BULB MUST BE CENTERED IN JOINT.



SECTION 4
M-210-212 SCALE: 1/2" = 1'-0"

Revised For Construction
DESTROY ALL OLD PRINTS
Date: _____ By: _____
RINKER MATERIALS CORP.

NOV 24 1986

M-210-213

DATE	REMARKS	INITIAL
10/14/86	GEN. REV.	N.A.

RINKER MATERIALS CORP & SUBSIDIARIES WEST PALM BEACH, FL	
SCL QUARRY	
PRESSURE CLEANING PAD	
STRUCTURAL SECTIONS	
DRAWN BY NICK A.	DRAWING NO. M-210-213
DATE 5/15/86	SHEET
CHECKED BY	
DATE	

M-210-213

V. PRE-TREATMENT AND POST-TREATMENT SOILS STORAGE AREA DESIGN

RECEIVED

JUN 7 1996

V. Pre-Treatment and Post-Treatment Soils Storage Area Design

DEPT. OF ENV. PROTECTION
WEST PALM BEACH

To prevent the intrusion of the weather element, a pre-treatment soils storage area will consist of a steel building erected to enclose a concrete walled 110 foot by 306 foot monolithic (12 inch thick) reinforced concrete slab.

The enclosed building will be open at one side to allow for handling equipment and trucking entry and egress.

The concrete slab (floor) is sloped to allow for leachate drainage to an internal sump adjacent to an above floor grade vertical leachate tank. All leachate will be prevented from entering into the groundwater or surface waters where contaminated soils are stored.

As leachate is created and accumulated in the pad sump, leachate will be removed via pump and transferred to an adjacent 8,000 gallon tank located inside the soil storage building.

As the need arises, the leachate tank will be pumped out by a licensed waste oil transporter and transferred to Rinker oily water process tank where the leachate will be feed directly to the kilns as slurry make up water for clinker product.

All debris and non-soils items that have been separated during the soils screening operation (i.e. pipe, rebar, plastic, etc.) will be deposited in covered container provided by Industrial Waste Service for deposition in a local land fill.

VI. SOILS SIZE REDUCTION METHOD

RECEIVED

JUN 7 1996

DEPT OF ENV PROTECTION
WEST PALM BEACH

VI. SOILS SIZE REDUCTION METHOD

All contaminated materials received by Rinker Materials Corporation for inclusion into the Material Substitution Program are first weighed (per load) and delivered to the storage area for quality control, consolidation and sizing.

The initial sizing is accomplished by processing all contaminated materials through a Power Screen mark II power grid. This equipment provides for sizing of equal to and less than 1-1/2 inches.

All material equal to and less than 1-1/2 inches is segregated from the screening operation via a stacker belt and transferred to the Raw Materials Storage building for further processing.

All material greater than 1-1/2 inches is segregated from the screening operation via a stacker belt and transferred to the jaw crusher and hammer mill (impactor) for further size reduction.

Material leaving this crushing cycle (less than 3 inches) is deposited into the Raw Material Storage building for further processing.

As cement production demands, the dry raw materials are transferred from storage (including the presized contaminated material) and introduced into one of four raw material grinding mills.

These mills reduce a blend of dry raw materials and water to a homogeneous slurry that can be pumped for kiln introduction and subsequent thermal processing.

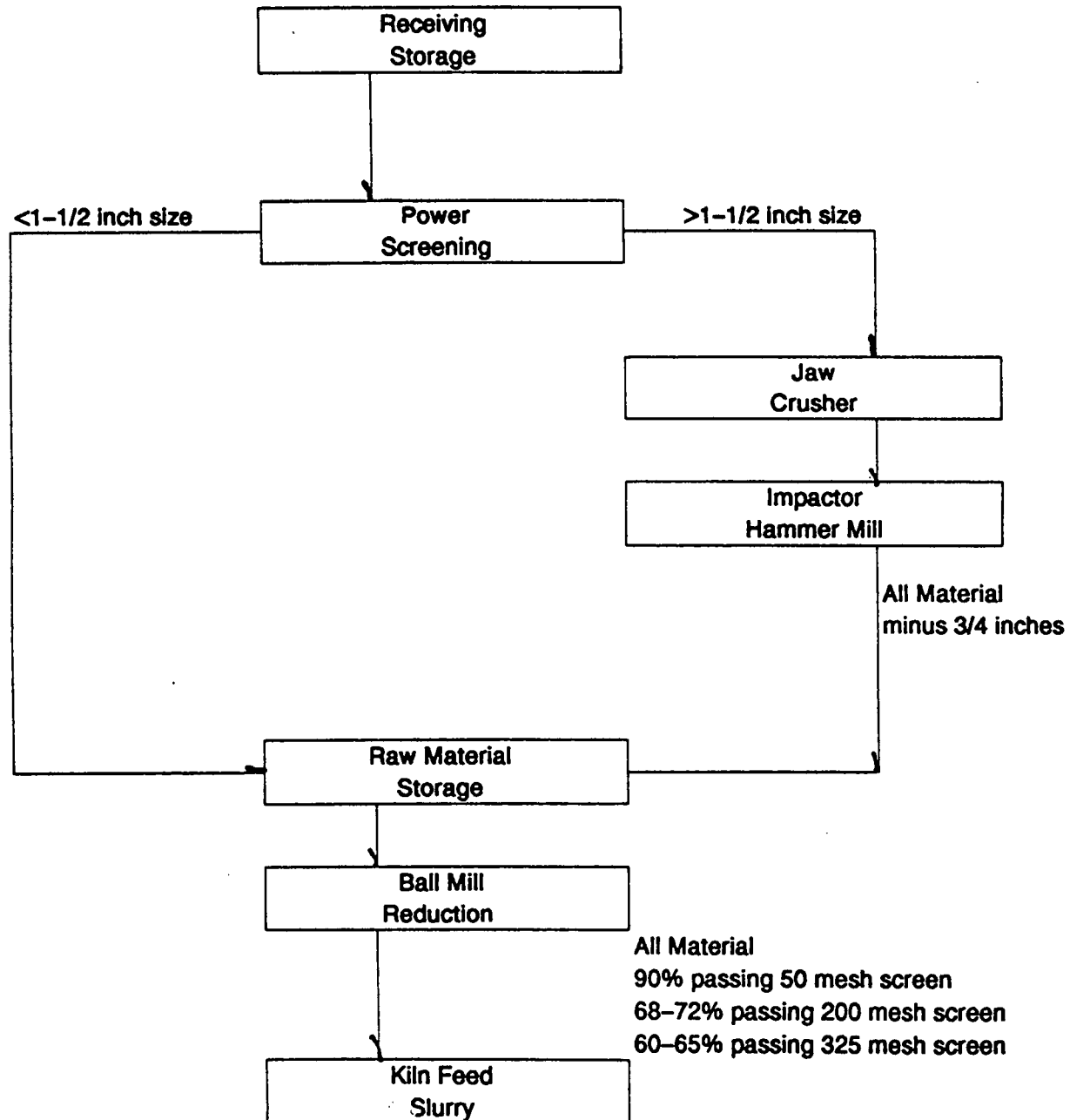
The slurried material has the following physical characteristics:

Moisture: ± 30%

Particle size: 90% passing 50 mesh screen
 68 - 72% passing 200 mesh screen
 60 - 65% passing 325 mesh screen

(Please note attached flow diagram)

SIZE REDUCTION METHOD (FLOW DIAGRAM)



METROPOLITAN DADE COUNTY, FLORIDA RECEIVED



JUN 7 1996



DEPT. OF ENV. PROTECTION
WEST PALM BEACH

ENVIRONMENTAL RESOURCES MANAGEMENT
POLLUTION PREVENTION DIVISION
SUITE 800
33 S.W. 2nd AVENUE
MIAMI, FLORIDA 33130-1540
(305) 372-6817

File# 10118

MULTIPLE SOURCE ANNUAL OPERATING PERMIT

PERMITTEE: Mr. Donald W Turner, P.G.
RINKER MATERIALS CORP.
P.O. BOX 5230
HIALEAH, FL 33014

MULTIPLE SOURCE PERMIT NUMBER: MSP-00050-95

DATE ISSUED: 15-NOV-1995

EFFECTIVE DATE: 10-01-1995

EXPIRATION DATE: 09-30-1996

LOCATION: RINKER MATERIALS - CEMENT MILL
1200 NW 137 AVE
MIAMI, FL 33182

SPECIFIC SOURCE TYPES INCLUDED IN THIS PERMIT:

SOLID WASTE SW 01117
INDUSTRIAL WASTE IW 00289

Should you have any questions regarding this permit, you may contact Sebastian Acosta at (305) 372-6819.

METROPOLITAN DADE COUNTY DEPARTMENT OF
ENVIRONMENTAL RESOURCES MANAGEMENT

A handwritten signature in cursive script, appearing to read "John W. Renfrow".
John W. Renfrow, P.E., Director

METROPOLITAN DADE COUNTY, FLORIDA



INDUSTRIAL WASTE
ANNUAL OPERATING PERMIT

ENVIRONMENTAL RESOURCES MANAGEMENT
POLLUTION PREVENTION DIVISION
SUITE 800
33 S.W. 2nd AVENUE
MIAMI, FLORIDA 33130-1540
(305) 372-6817

PERMITTEE:

Mr. Donald W. Turner, P.G.
RINKER MATERIALS CORP.
P.O. BOX 5230
HIALEAH, FL 33014

PAGE 1 OF 2

PERMIT No.: IW-00289 (2)/MSP-00050-95 2 05
SOURCE NAME: RINKER MATERIALS - CEMENT MILL
LOCATION: 1200 NW 137 AVE
MIAMI, FL 33182

DESCRIPTION OF FACILITY/EQUIPMENT:

I. ABOVEGROUND STORAGE FACILITIES FOR USED OILS, OILY WASTEWATER AND CONTAMINATED SOILS INCLUDING:

- A. Two (2) 600,000 gal. tanks, one each for used oil and oily wastewater, situated on concrete pads with earthen berms.
- B. Concrete secondary containment structure (150' x 30' x 2' high) for six (6) 25,000 gal. oily wastewater and waste oil tanks.
- C. Concrete secondary containment structure (38'6" x 34'6" x 3'6" high) including: a) two (2) 20,000 gal. kiln day tanks containing oily wastewater, and b) adjacent concrete off loading area (65' x 22') with a 36" wide, 5" high berm on three sides.
- D. One (1) 30,000 gal kiln day tank containing used oil, secondarily contained within an enclosed building.
- E. Contaminated soils storage building including:
 1. Four (4) groundwater monitoring wells;
 2. Concrete secondary containment structure for one (1) 2,000 gal. leachate collection tank with associated pumps and piping.
- F. SPECIFIC CONDITIONS 01 THROUGH 09 AND 14 PERTAIN TO THIS PORTION OF THE PERMIT.

II. PORTLAND CEMENT MANUFACTURING FACILITIES INCLUDING:

- A. Concrete secondary containment structure (dimensions pending plans) including one (1) 12,000 gal. and two (2) 10,000 gal. aboveground concrete admix tanks.
- B. Slurry mixing basin (55' diameter x 26' high) and two (2) kiln feed tanks (55' diameter x 26' high).
- C. Concrete truck unloading pad (59' x 24') with a 10" high berm and a collection sump.
- D. Thirty (30) 2,800 ton silos for cement storage.
- E. Roofed, concrete secondary containment structure (9' x 9' x 2' high) including one (1) 250 gal aboveground diesel fuel tank.
- F. Roofed, concrete secondary containment structure (7' x 6' x 4' high) including one (1) 100 gal. aboveground diesel fuel tank.
- G. Two (2) production wells to supply water for clinker manufacture and one (1) potable water well.
- H. Twenty three (23) groundwater monitoring wells located throughout the facility.
- I. SPECIFIC CONDITIONS 07, 08, 09, AND 14 PERTAIN TO THIS PORTION OF THE PERMIT.

III. VEHICLE MAINTENANCE AND PRESSURE CLEANING FACILITIES INCLUDING:

- A. One (1) 20,000 gal. aboveground diesel fuel tank, secondarily contained within an enclosed building, with one dispenser pump for vehicle fueling.
- B. Virgin oil drum storage and dispensing room with a concrete berm at the entrance.
- C. Reclaim system for pressure cleaning operation within a roofed building including: a) two (2) collection pits, b) aeration/settling pit, c) oil/water separator, and d) one (1) aboveground recycled water tank.
- D. SPECIFIC CONDITIONS 08 THROUGH 14 PERTAIN TO THIS PORTION OF THE PERMIT.

Subject to specific and general conditions listed below and in the following pages of this document (if any).

Section Approval:

Mayra J. Flagler

SPECIFIC CONDITIONS:

- 01 A log documenting all used oil and oily wastewater deliveries must be maintained on site and presented to Department representatives on request. Said log shall contain, at a minimum, the following information: date and time of delivery, name of transporter, truck or tag number, driver's signature, type and volume of liquid waste and disposition (accepted or rejected) of waste.
- 02 Liquid wastes shall only be accepted from DERM permitted liquid waste transporters.
- 03 Prior to the off loading of used oil, a sample shall be collected from each truck. Said sample shall be analyzed on site to determine conformance with the specifications for used oil as a fuel and shall include total halogens, Pb, Cr, Cd, and As. A pre-certification analysis supplied to Rinker by DERM permitted waste oil haulers will satisfy the requirements of this condition. Records of analyses shall be maintained on the premises and presented to Department representatives upon request.
- 04 Prior to the off loading of oily wastewater, a sample shall be collected from each truck. Said sample shall be analyzed on site to insure that said waste is not hazardous and shall include flash point, Pb, Cr, Cd, As, Ba, Hg, Ag, Se and chlorinated hydrocarbons. Records of analyses shall be maintained on the premises and presented to Department representatives on request.
- 05 Hazardous waste shall not be accepted and processed at this site. The discovery of any hazardous waste shall be reported to this Department (372-6789) within two (2) hours of occurrence. The "beneficial re-use" of hazardous waste by recycling or by equivalent product substitution will not be permitted.
- 06 A monthly report of operations shall be submitted to this Department on or before the 15th of the following month including:
 1. Records of the in-house monthly used oil analyses composited from samples collected from each delivery.
 2. Records of the required weekly in-house analyses of samples collected from the 20,000 gal. oily wastewater day tanks for Pb, Cr, Cd, As, Ba, Hg, Ag, Se and chlorinated hydrocarbons.
 3. Analytical data from an independent certified laboratory of flash point, percent water, Pb, Cr, Cd, As and EPA Series 601 organics from one of the 30,000 gal. used oil day tank.
 4. Analytical data from an independent certified laboratory of flash point, Pb, Cr, Cd, Ba, Hg, Ag, Se and EPA Series 601 organics from one of the 20,000 gal. oily wastewater day tanks.
- 07 Operations to be conducted in accordance with the Spill Prevention Control Countermeasure (SPCC) Plan as submitted and approved by this Department.
- 08 Secondary containment facilities shall be inspected daily. Stormwater drainage valves shall only be opened to discharge rainwater and remain closed at all other times to avoid a by-pass of the containment system. Any leaks and/or failures of the containment system must be immediately reported to DERM at (305) 372-6789.
- 09 Permittee shall be responsible for immediate notification to this Department of oil or hazardous materials discharges or spills. Spills must be reported within four (4) hours of occurrence, the emergency telephone number is (305) 372-6789.
- 10 Hazardous waste, sludge and other industrial wastes and/or wastewater must be transported by DERM approved transporters. Analytical data must be submitted to DERM, for all waste and/or wastewater that is disposed of locally. Failure to gain approval from DERM, for disposal, will result in rejection of your waste at the disposal facility.
- 11 A monthly report of operations shall be submitted to this Department on or before the 15th of the following month including: copies of manifests and/or receipts of all hazardous waste, industrial waste and/or wastewater disposed of. Information shall include name of hauler, volume and final destination. Records shall be kept on the premises to be presented upon request.
- 12 A semi-annual report of operations shall be submitted to this Department on, or before January 15th and July 15th including:
 1. Analytical data, from a certified laboratory for locally disposed sludge for total metals and EPA series 601 and 602 organics.
 2. Sludge volume, name of hauler and final destination.Failure to submit this information may cause rejection of your waste for local disposal. Sludge and other industrial waste shall only be transported by DERM approved haulers.
- 13 The Department of Environmental Resources Management requires the submittal of a formal Closure Plan to insure the proper removal/disposal of all hazardous/non-hazardous materials and/or wastes stored on site. The Closure Plan must be submitted for review and approval, a minimum of thirty (30) days prior to the cessation or relocation of operations. Please call 372-6600 for information on requirements.

METROPOLITAN DADE COUNTY, FLORIDA



**INDUSTRIAL WASTE.
ANNUAL OPERATING PERMIT**

**ENVIRONMENTAL RESOURCES MANAGEMENT
POLLUTION PREVENTION DIVISION
SUITE 800
33 S.W. 2nd AVENUE
MIAMI, FLORIDA 33130-1540
(305) 372-6817**

PERMITTEE:

**Mr. Donald W. Turner, P.G.
RINKER MATERIALS CORP.
P.O. BOX 5230
HIALEAH, FL 33014**

PAGE 2 OF 2

**PERMIT No.: IW-00289 (2)/MSP-00050-95 2 05
SOURCE NAME: RINKER MATERIALS - CEMENT MILL
LOCATION: 1200 NW 137 AVE
MIAMI, FL 33182**

- 14 Operations to be conducted in accordance with the Spill Prevention Control Countermeasure (SPCC) Plan as submitted and approved by this Department.
- 15 If at any time these facilities are found to be performing inadequately, the owner must provide improvements to the operating techniques and/or additional equipment to operate in compliance with the applicable regulations.

GENERAL CONDITIONS:

- 16 The applicant, by acceptance of this document, agrees to operate and maintain the subject operation so as to comply with the requirements and standards of Chapter 24 of the Code of Metropolitan Dade County.
- 17 If for any reason, the applicant does not comply with or will be unable to comply with any condition or limitation specified on this document the applicant shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps taken to reduce, eliminate, and prevent recurrence of the non-compliance. The applicant shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this document.
- 18 As provided in Section 24-30 of the Code of Metropolitan Dade County, the prior written approval of the Department of Environmental Resources Management shall be obtained for any alteration to this facility.
- 19 The issuance of this document does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. Nor does it relieve the applicant from liability for harm or injury to human health or welfare or property.
- 20 This document is required to be posted in a conspicuous location at the pollution control facility site during the entire period of operation.
- 21 This document is not transferable. Upon sale or legal transfer of the property or facility covered by this document, the applicant shall notify the department within thirty(30) days. The new owner must apply for a permit within thirty (30) days. The applicant shall be liable for any non-compliance of the source until the transferee applies for and receives a transfer of this document.
- 22 The applicant, by acceptance of this document, specifically agrees to allow access to the named source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this document and department rules.
- 23 This document does not indicate a waiver of or approval of any other department permit that may be required for other aspects of this facility.
- 24 This document does not constitute an approval by DERM or certification that the applicant is in compliance with applicable laws, ordinances, rules or regulations. The applicant acknowledges that separate enforcement actions may be initiated by DERM and that this document does not constitute compliance with orders issued in conjunction with enforcement actions for correction of violations.

- 25 Failure to comply with any condition of this document, or the standards as set forth in Chapter 24, Code of Metropolitan Dade County may subject the applicant to the penalty provisions of said Chapter including civil penalties up to \$25,000 per day per offense and/or criminal penalties of \$500 per day and/or sixty (60) days in jail.

INDUSTRIAL WASTE OPERATING REPORT FORM

PERMIT #: IW-00289 / MSP-00050 / FILE #: 000010118
CONTACT NAME: Mr. Donald W Turner, P.G. REPORT DATE: _____
MAILING NAME: RINKER MATERIALS CORP.
ADDRESS: P.O. BOX 5230

FACILITY: RINKER MATERIALS - CEMENT MILL REPORT PERIOD: _____
LOCATION: 1200 NW 137 AVE

=====

CERTIFIED LABORATORY USED AND I.D. NUMBER:

=====

REPORTING FREQUENCY AND PARAMETERS REQUIRED:

A semi-annual January 15th and July 15th sludge total metals
and EPA series 601 and 602 organics Sludge Sludge

* Please attach laboratory analysis reports

=====

SLUDGE AND WASTE DISPOSAL

WASTE DISPOSED TO: _____

WASTE DISPOSAL DATE(S): _____

TYPE AND AMOUNT OF HAZARDOUS/INDUSTRIAL WASTE: _____

NAME OF HAZARDOUS/INDUSTRIAL WASTE HAULER: _____

AVERAGE DAILY WASTEWATER FLOW: _____

* Please attach proof of disposal

=====

I hereby certify that, to the best of my knowledge, this document and
all the attachments are true, accurate and complete.

Authorized Representative or Corporate Official

METROPOLITAN DADE COUNTY, FLORIDA



**SOLID WASTE
ANNUAL OPERATING PERMIT**

ENVIRONMENTAL RESOURCES MANAGEMENT
POLLUTION PREVENTION DIVISION
SUITE 800
33 S.W. 2nd AVENUE
MIAMI, FLORIDA 33130-1540
(305) 372-6817

PERMITTEE:

Mr. James S. Jenkins, III
RINKER MATERIALS CORP.
P.O. BOX 24635
W PALM BEACH, FL 33416

PAGE 1 OF 2

PERMIT No.: SW-01117/MSP-00050-95 05
SOURCE NAME: RINKER MATERIALS - CEMENT MILL
LOCATION: 1200 NW 137 AVE
MIAMI, FL 33182

DESCRIPTION OF FACILITY/EQUIPMENT:

Thermal Treatment Facility accepting non-hazardous contaminated soils which will be utilized in the manufacture of cement clinker.

SPECIFIC CONDITIONS:

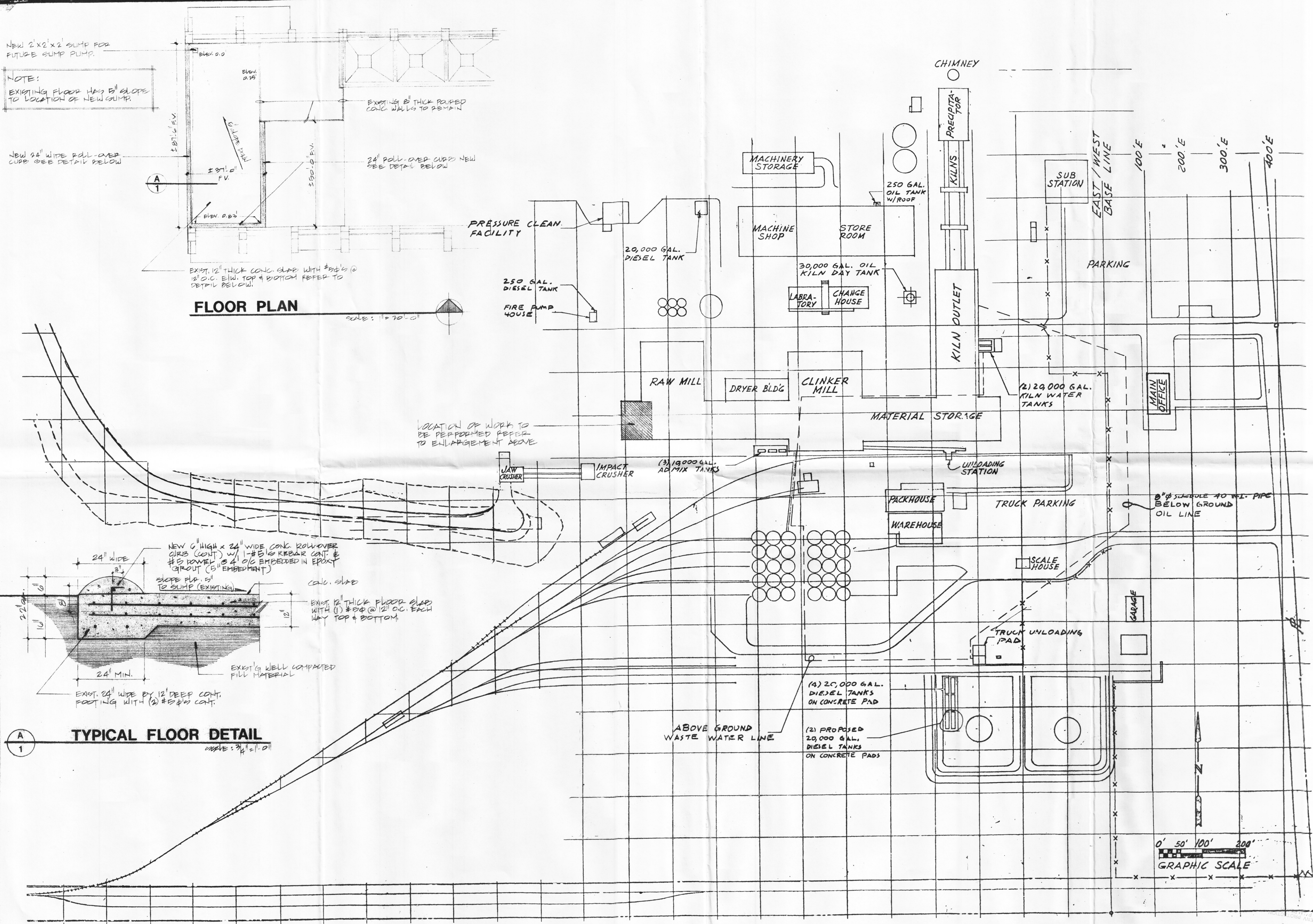
- 01 Thermal Treatment Facility shall be operated in strict accordance with information submitted in permit application dated March 12, 1991 and April 5, 1991 and DER permit # SO-13-193578.
- 02 Contaminated soil material accepted shall be limited to non-hazardous soils generally limited to virgin petroleum based materials which will be incorporated into clinker production.
- 03 24 hour access control shall be maintained by a fence and/or guard surrounding the perimeter of the site.
- 04 No hazardous waste (beneficial recycling use is not exempted) will be accepted at this site.
- 05 No violations of the Dade County groundwater standards as provided in Chapter 24-11 shall occur as a result of these thermal treatment and contaminated soil storage operations.
- 06 Permitted boundaries of the contaminated soil storage site shall be clearly delineated. Waste shall not be stored outside of the permitted area.
- 07 During the period of operation allowed by the permit, the permittee shall submit a copy of a monthly report. This shall include amounts of materials received (including slag and ash) and route analysis (total and TCLP) and sources of material. This report must be submitted by the 15th of each month.
- 08 Hydrocarbon contaminated soils shall be stored on an impermeable surface and isolated so that no stormwater runoff or seepage to the ground or groundwaters or surface waters shall occur during periods of heavy rain as per 17-775, FAC.
- 09 Contaminated soil storage facility shall be operated in strict accordance with plan approval dated July 10, 1991.
- 10 Maximum holding time for contaminated soils at this facility shall not exceed 90 days unless otherwise authorized by DERM.
- 11 Within 30 days of approval by this Department implement the approved groundwater monitoring plan (with modifications) dated September 26, 1991.
- 12 DERM shall be contacted 3 working days in advance of all sampling events. Contact DERM's (Solid Waste Program) at 372-6804. Within 15 days of sampling, the permittee shall submit the analytical data to DERM for evaluation.
- 13 No nuisance conditions shall occur as a result of these operations.

Section Approval: _____


- 14 This document is subject to revocation if violations of these permit conditions or violations of Chapter 24 occur.
- 15 Contaminated soil material accepted shall be limited to non-hazardous soils generally to petroleum contaminated soils profiled pursuant to FDEP Chapter 17-775FAC and additional DERM requirements as stated below:
Contaminated soils shall:
a) not exceed 1 ppm volatile organic halocarbons;
b) not exceed 1,000 ppm total volatile organic aromatics - 8020;
c) not exceed 17 ppm mercury.
Any contaminated soils exceeding these limits may not be accepted without prior DERM review and approval.
- 16 A monthly operating report shall be submitted to DERM with the number of sites, the name of the sites, the total soil volume or weight received, and the total fees collected.
- 17 The maximum number of whole tires that shall be stored on site at any time is 28,000 .
- 18 Whole tires may be used as a supplemental fuel in only the No. 1 cement kiln.
- 19 Indoor or outdoor tire storage must be approved by the local fire department.
- 20 Mosquito control shall be implemented as directed by the local mosquito control office.
- 21 An annual report shall be submitted to DERM including total number of tires received and names of suppliers.
- 22 Within 30 days of receipt of this document submit to this office a stormwater management plan. This must include an outdoor tire storage plan.
- 23 Within 30 days of approval by this Department implement the approved stormwater management plan.
- 24 Fire control facilities must be provided at the site.

GENERAL CONDITIONS:

- 25 The applicant, by acceptance of this document, agrees to operate and maintain the subject operation so as to comply with the requirements and standards of Chapter 24 of the Code of Metropolitan Dade County.
- 26 If for any reason, the applicant does not comply with or will be unable to comply with any condition or limitation specified on this document the applicant shall immediately notify and provide the department with the following information: (a) a description of and cause of non-compliance; and (b) the period of non-compliance including exact dates and times; or, if not corrected, the anticipated time the non-compliance is expected to continue, and steps taken to reduce, eliminate, and prevent recurrence of the non-compliance. The applicant shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this document.
- 27 As provided in Section 24-30 of the Code of Metropolitan Dade County, the prior written approval of the Department of Environmental Resources Management shall be obtained for any alteration to this facility.
- 28 The issuance of this document does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. Nor does it relieve the applicant from liability for harm or injury to human health or welfare or property.
- 29 This document is required to be posted in a conspicuous location at the pollution control facility site during the entire period of operation.
- 30 This document is not transferable. Upon sale or legal transfer of the property or facility covered by this document, the applicant shall notify the department within thirty(30) days. The new owner must apply for a permit within thirty (30) days. The applicant shall be liable for any non-compliance of the source until the transferee applies for and receives a transfer of this document.
- 31 The applicant, by acceptance of this document, specifically agrees to allow access to the named source at reasonable times by department personnel presenting credentials for the purposes of inspection and testing to determine compliance with this document and department rules.
- 32 This document does not indicate a waiver of or approval of any other department permit that may be required for other aspects of this facility.



REVISIONS	BY



RINKER MATERIALS CORPORATION
MIAMI, FLORIDA

SITE PLAN

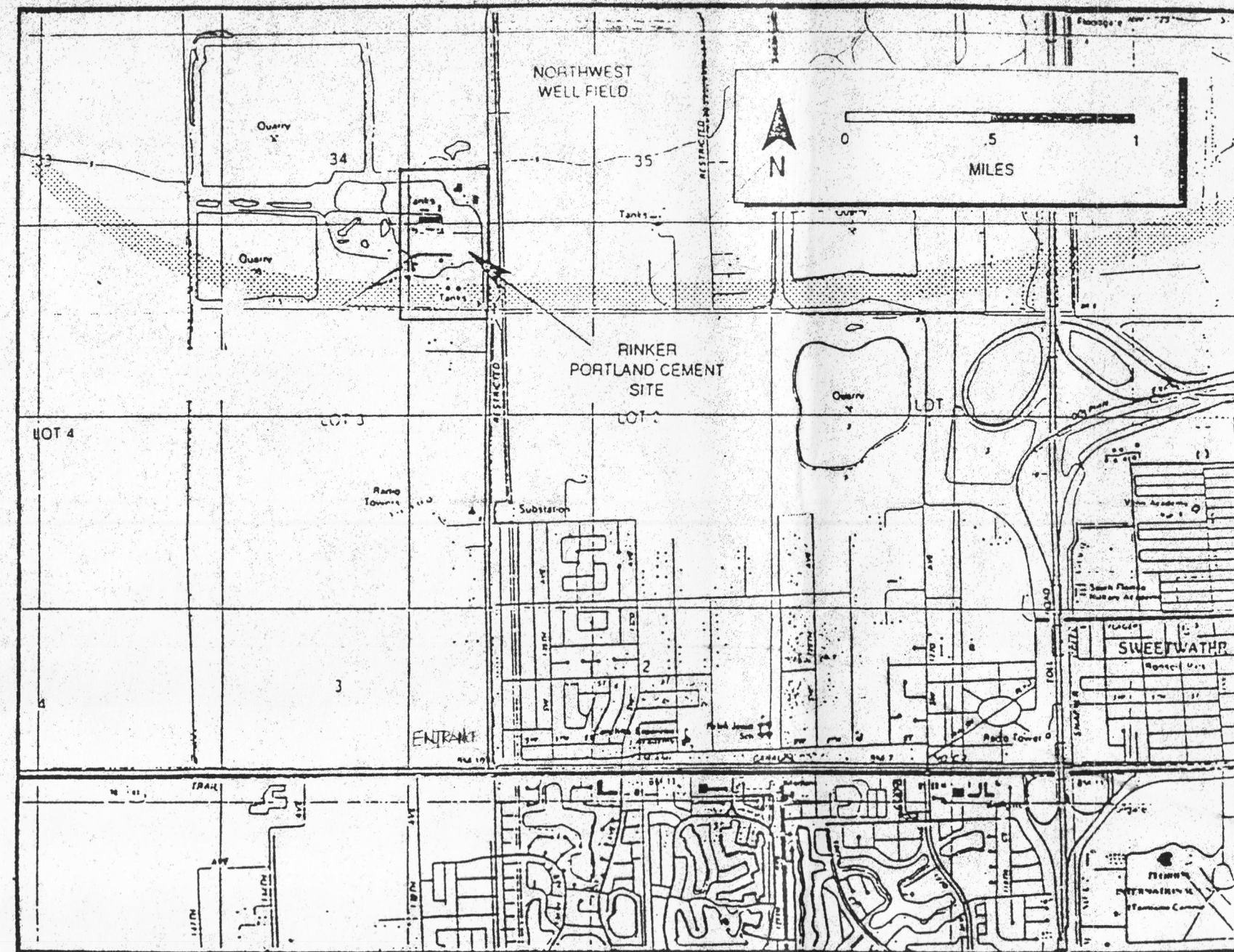
1200 N.W. 137th AVENUE

DRAWN BY
CHECKED BY
4/19/91
NOTED BY
91-789

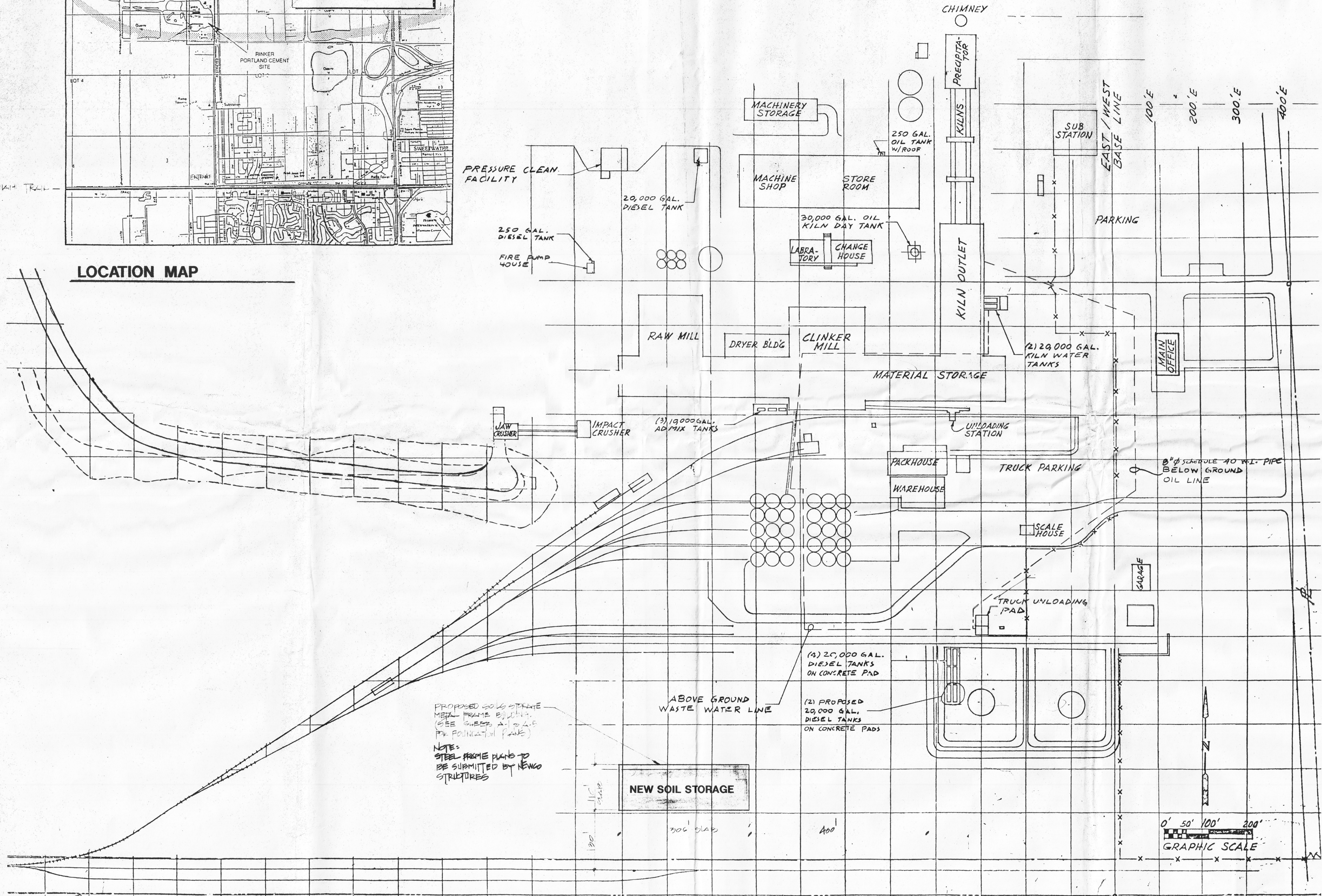
1

OF SHEETS

REPRO PRODUCTS, INC. 335174



LOCATION MAP



PROPOSED SOIL STORAGE METAL FRAME BUILDING (SEE SHEET A-10-5 FOR FOUNDATION PLAN)
NOTE: STEEL FRAME PLANS TO BE SUBMITTED BY NEWCO STRUCTURES

REVISIONS	BY
NOTED 5/20/80	SD

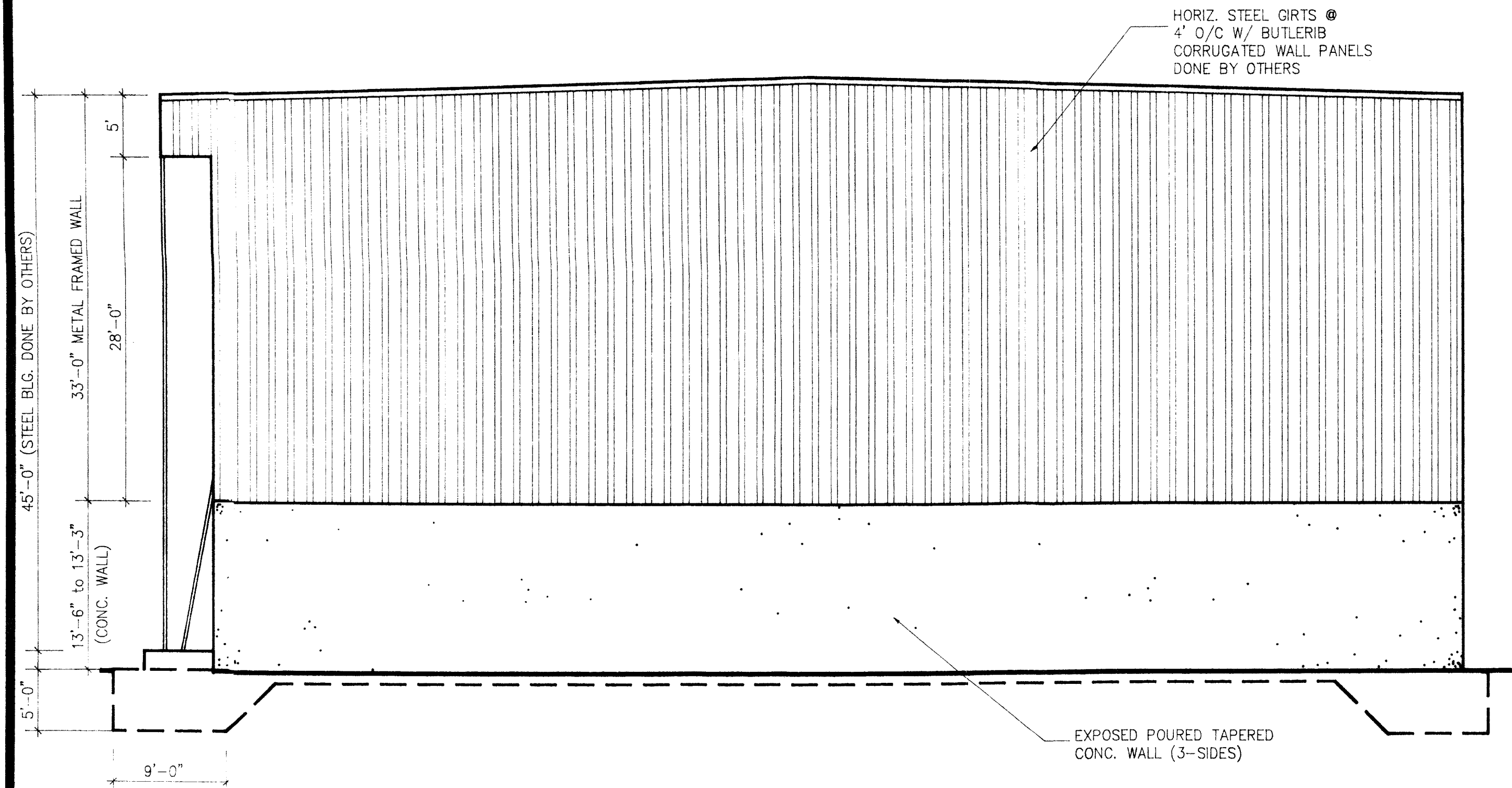


RINKER MATERIALS CORP.
1200 N.W. 137th AVENUE
MIAMI, FLORIDA

SITE PLAN

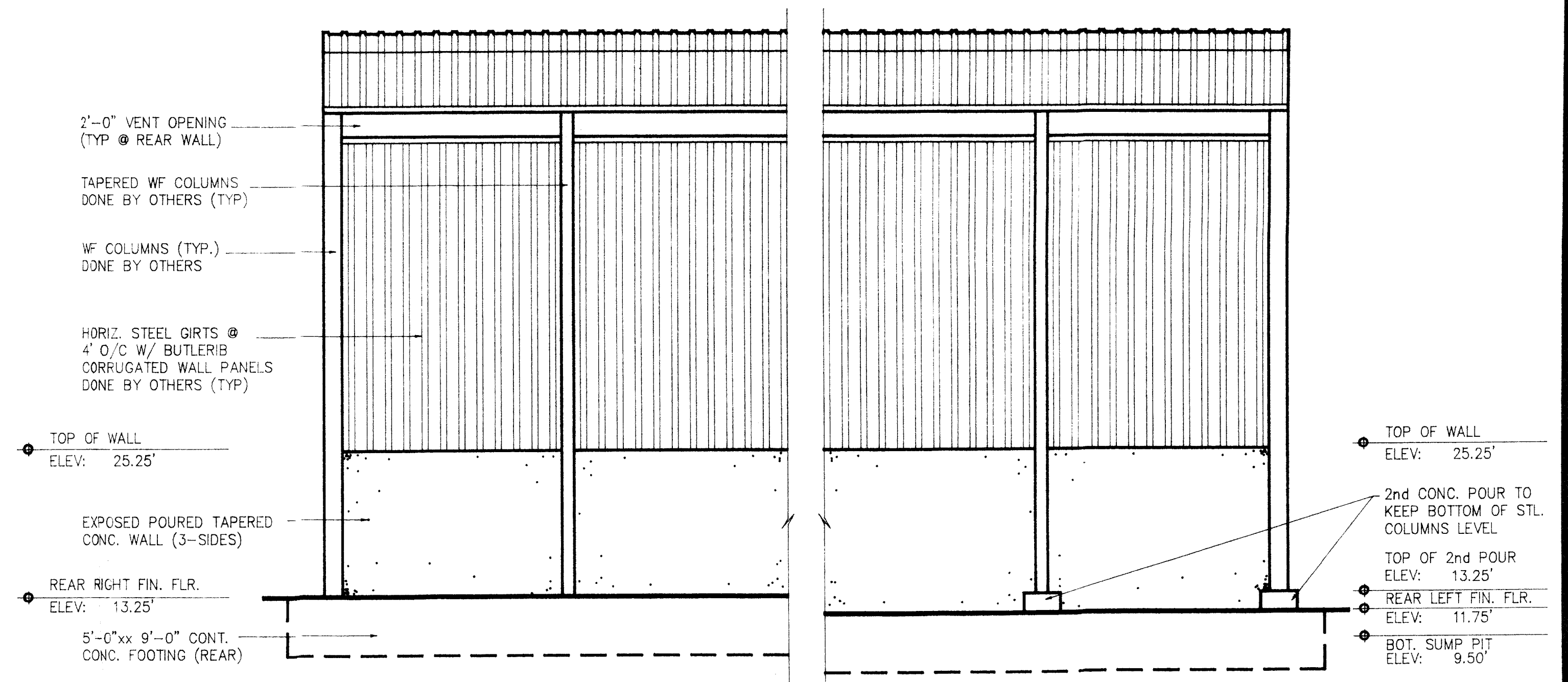
RECEIVED
JUN 7 1980
DEPT. OF ENVIRONMENTAL PROTECTION
WEST PALM BEACH

DRAWN	
CHECKED	
DATE	5/25/81
SCALE	AS SHOWN
NOTED	
DATE	5/25/81
BY	



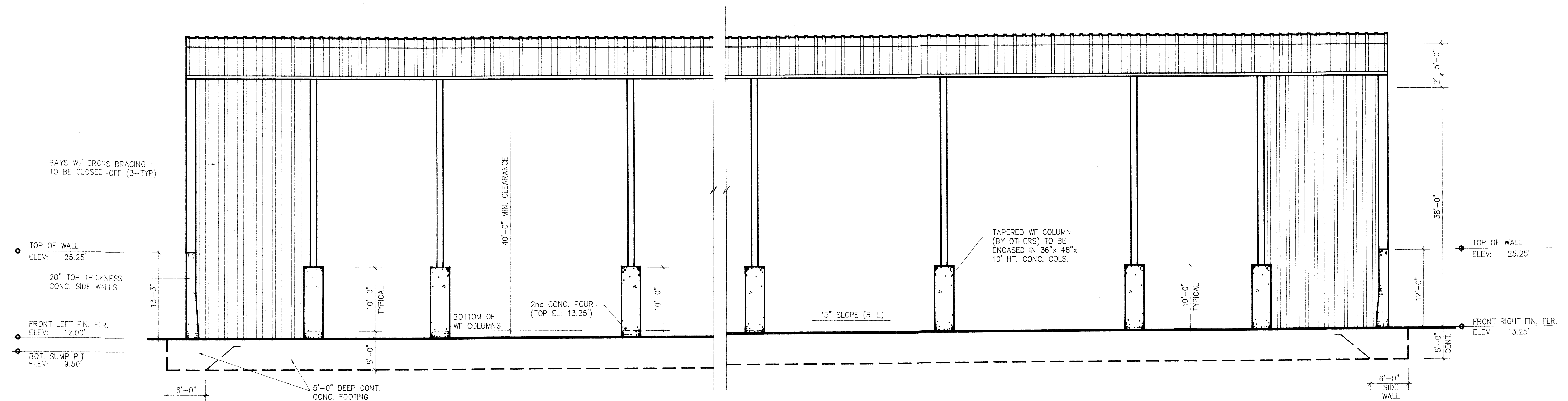
SIDE ELEVATION

SCALE: 1/8"=1'-0"



REAR ELEVATION

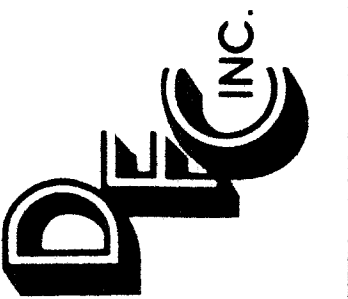
SCALE: 1/8"=1'-0"



FRONT ELEVATION

SCALE: 1/8"=1'-0"

REVISIONS	BY



MIAMI, FLORIDA

EXTERIOR ELEVATIONS
RINKER MATERIALS CORP.

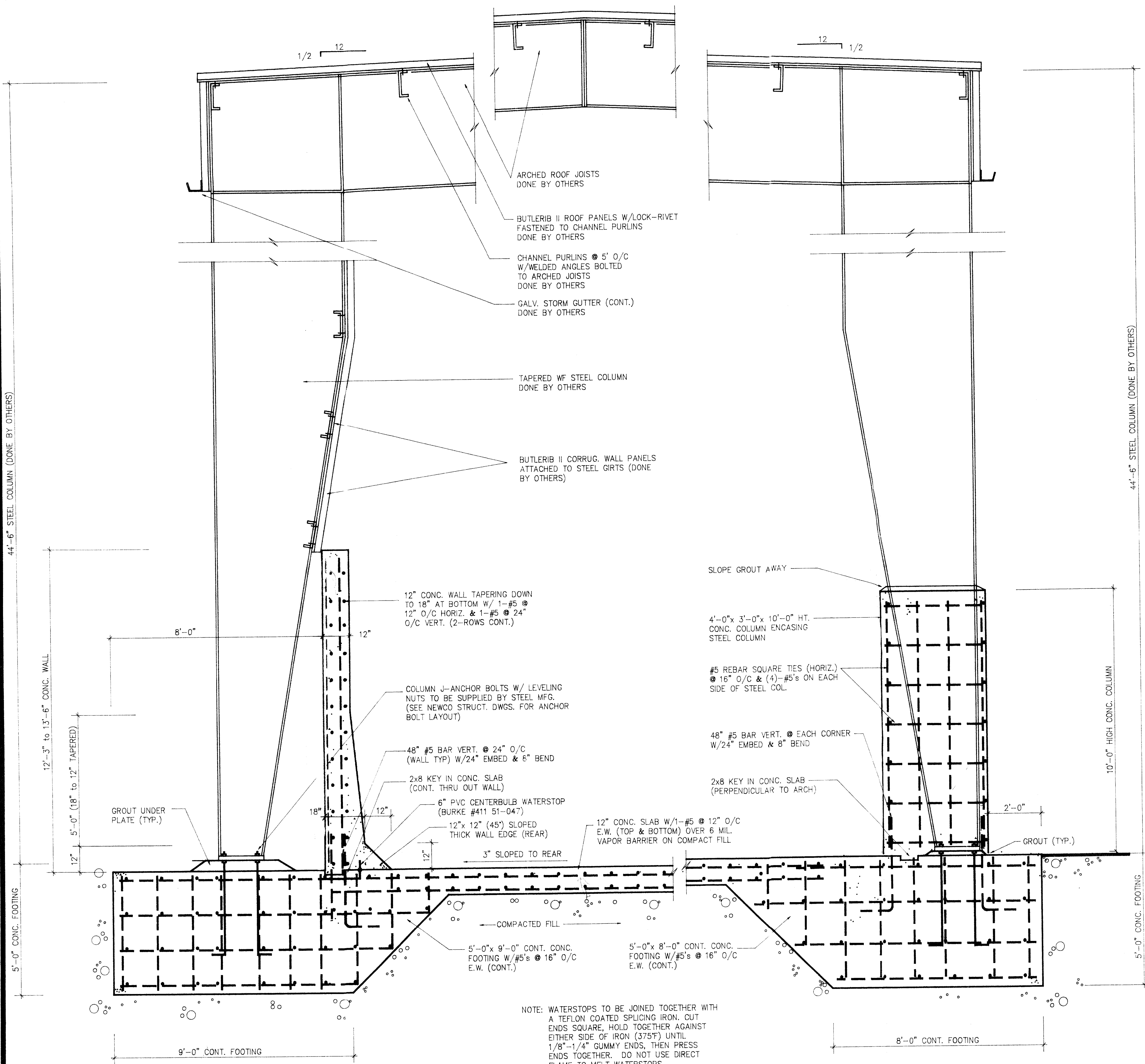
1200 N.W. 137th AVE.

DRAWN
CHECKED
DATE
SCALE
JOB NO. 90-601
SHEET
A-2
OF SHEETS

44'-6" STEEL COLUMN (DONE BY OTHERS)

5'-0" CONC. FOOTING

REPRO PRODUCTS, INC. 130174



NOTE: WATERSTOPS TO BE JOINED TOGETHER WITH A TEFLON COATED SPLICING IRON. CUT ENDS SQUARE, HOLD TOGETHER AGAINST EITHER SIDE OF IRON (375°F) UNTIL 1/8"-1/4" GUMMY ENDS, THEN PRESS ENDS TOGETHER. DO NOT USE DIRECT FLAME TO MELT WATERSTOPS.

TAPERED COLUMNS
SCALE: 1/2"=1'-0"

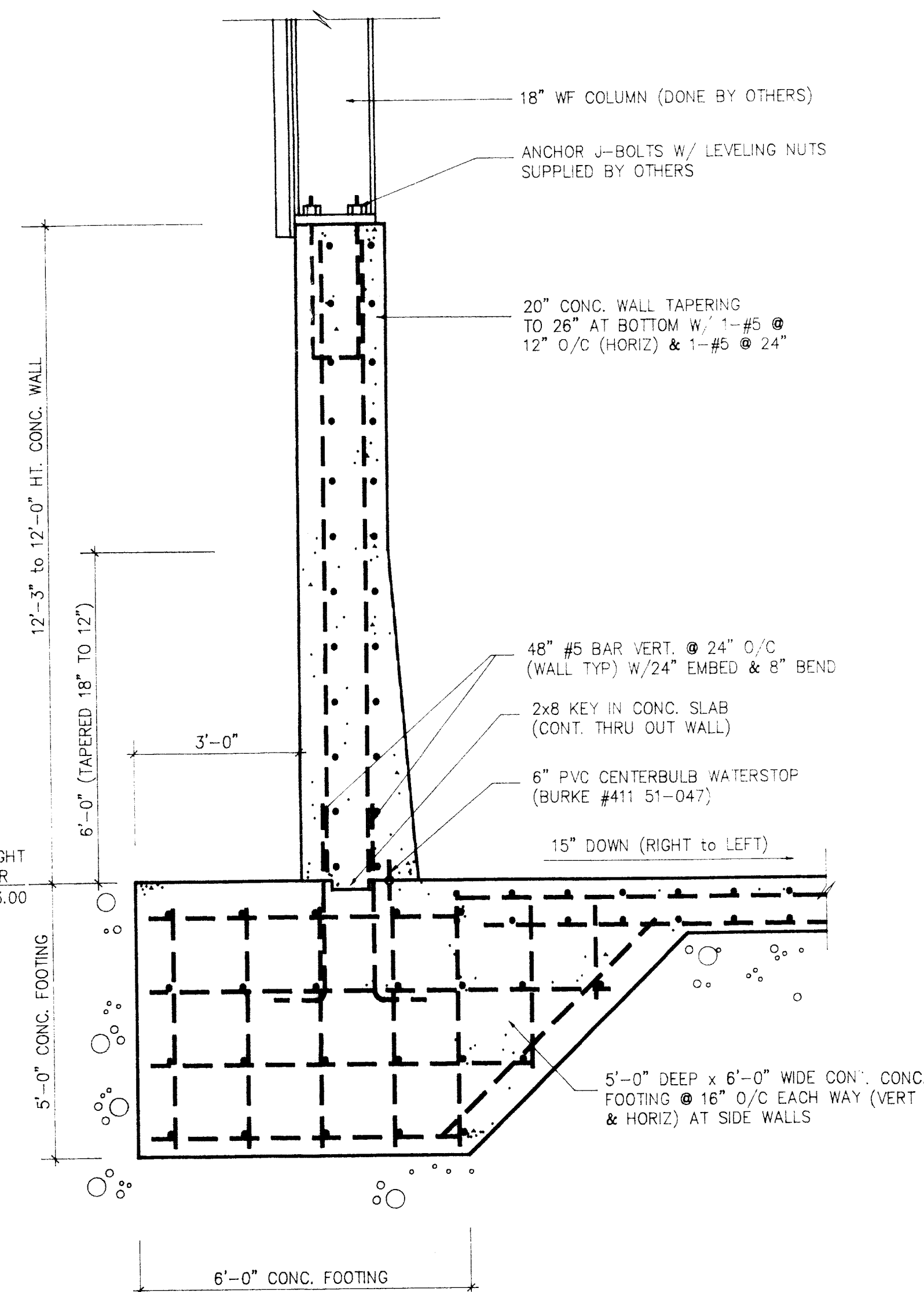
44'-6" STEEL COLUMN (DONE BY OTHERS)

10'-0" HIGH CONC. COLUMN

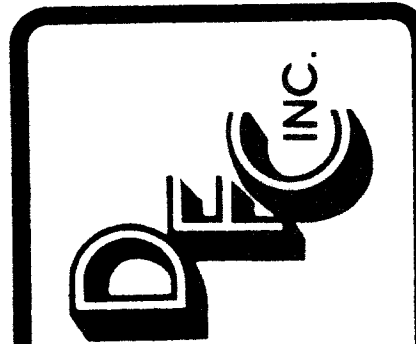
5'-0" CONC. FOOTING

FRONT RIGHT FIN. FLOOR ELEV. 13.00

SIDE WALL SECTIONS
SCALE: 1/2"=1'-0"




REVISIONS	BY



WALL SECTIONS
RINKER MATERIALS CORP.
MIAMI, FLORIDA
1200 N.W. 137th AVE.

DRAWN	
CHECKED	
DATE	2/1/91
SCALE	
JOB NO.	90-601
SHEET	
A-3	
OF	SHEETS

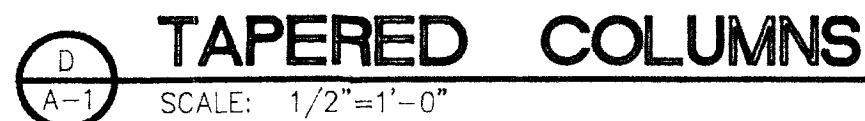


1200 N.W. 137th Ave.

WALL SECTIONS

PRINKER MATERIALS CORP.

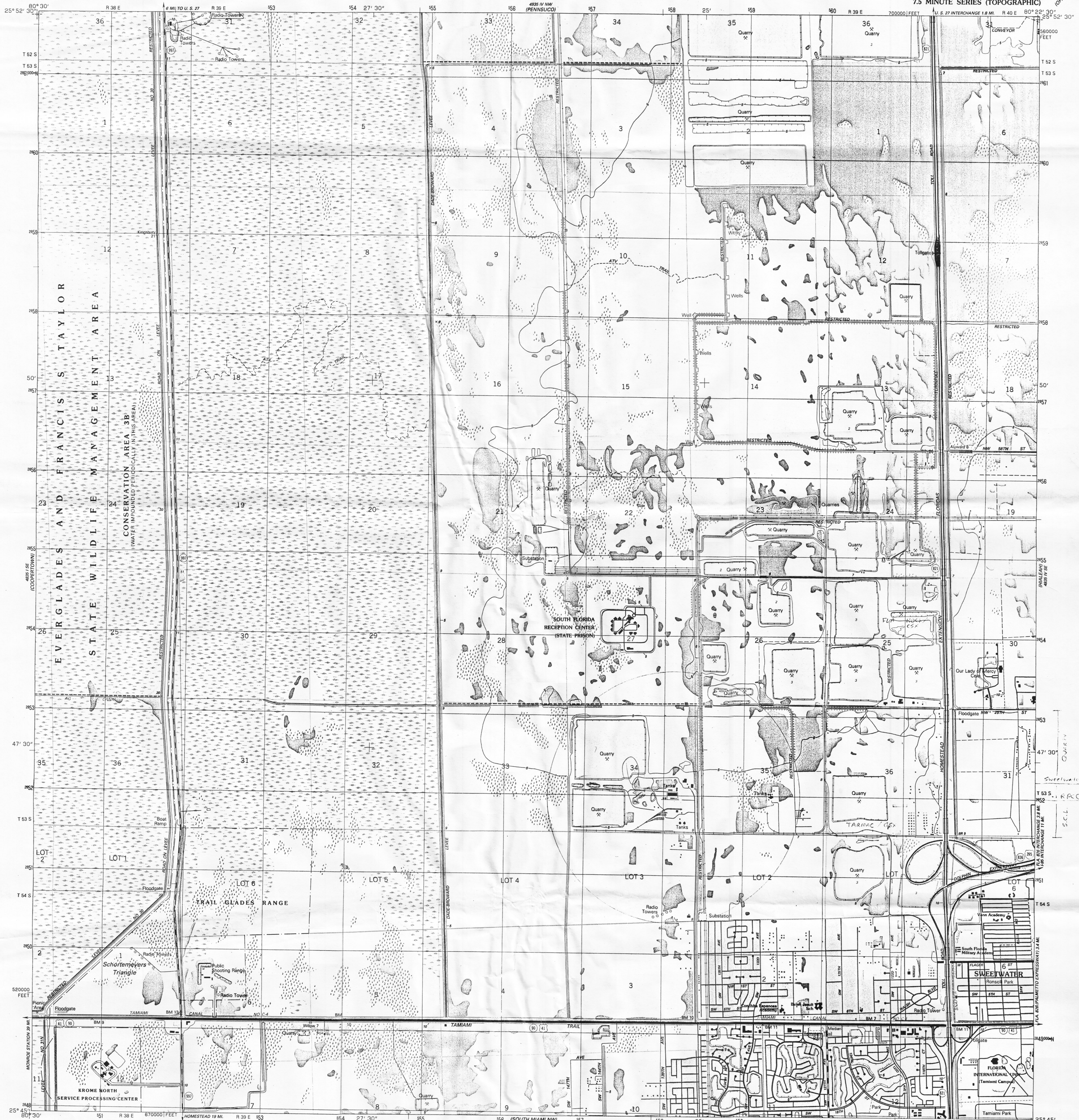
A-4



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

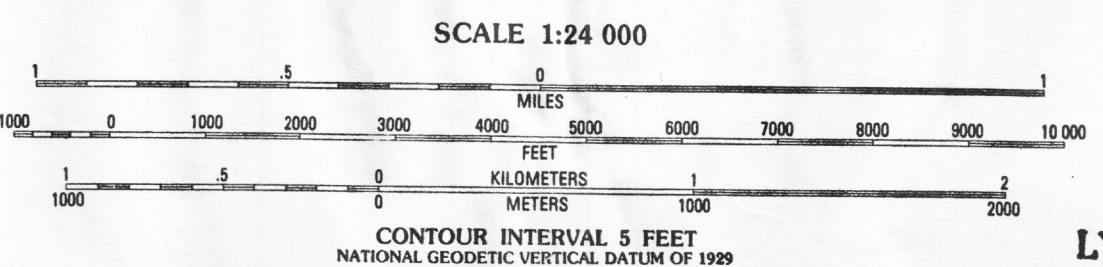
STATE OF FLORIDA

HIALEAH SW QUADRANGLE
FLORIDA-DADE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)



Produced by the United States Geological Survey
Control by USGS, NOS/NOAA and Florida Geodetic Survey
Planimetry by photogrammetric methods from aerial photographs
taken 1986. Topography by planimetric surveys 1973
Revised from aerial photographs taken 1986
Field checked 1987. Map edited 1988
Projection and 10,000-foot grid ticks: Florida coordinate
system, east zone (transverse Mercator)
1000-meter Universal Transverse Mercator grid, zone 17
1927 North American Datum
To place on the predicted North American Datum 1983,
move the projection lines 40 meters south and
22 meters west as shown by dashed corner ticks
There may be private inholdings within the boundaries of
the National or State reservations shown on this map
No distinction made between houses, barns, and other buildings
Gray tint indicates areas in which only landmark buildings are shown
Dotted land lines established by State of Florida
Fine red dashed lines indicate selected fence and field lines where
generally visible on aerial photographs. This information is unclassified

UTM GRID AND 1983 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

LYONS MAP CO.
518 N.E. 167th Street / N. Miami Beach, FL 33162 / (305) 965-1000
Maps • Globes • Atlases • Angle Locators
Agents for all maps published by leading companies

ROAD CLASSIFICATION
Primary highway, hard surface Light-duty road, hard or improved surface
Secondary highway, hard surface Unimproved road
Interstate Route U.S. Route State Route
County Route

HIALEAH SW, FLA.

25080-G4-TF-024

1988

DADE COUNTY ENGINEERING DEPARTMENT.
DADE COUNTY, FLORIDA 27-53-39

ZONING MAP

28-53-39
N.W. 25TH ST.

(A)
899

26-53-39

Comm. District No.
School
Drainage

Sec. 34
Twp. 53
Rge. 39

N.W. 17TH ST.
33-53-39

35-53-39

300^{sf}

GU

NW-1

IU3

N.W. 12TH ST.
LOT 4
N.W. 17TH AV.

LOT 3

LOT 2
N.W. 17TH AV.

29-53-39
N.W. 25th ST.

(A
1029)

DADE COUNTY ENGINEERING DEPARTMENT.
DADE COUNTY, FLORIDA.
28-53-39

ZONING MAP

21-53-3

Comm. District No.
School "
Drainage "

Sec. 33
Twp. 53
Rge. 39

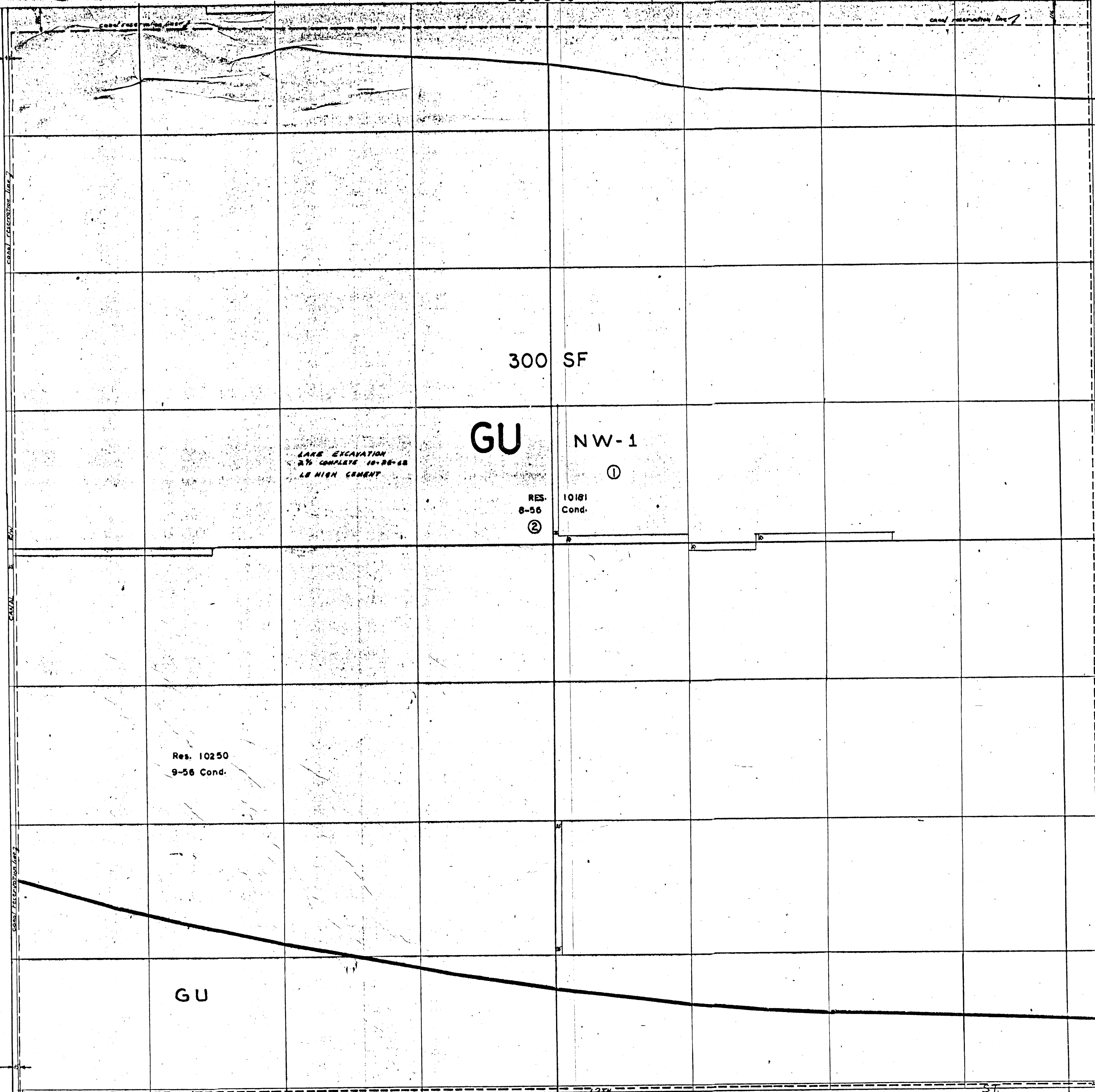
32-53-39
N.W. 17th ST.

34-53-39

N.W. 12th ST.
LOT 5
N.W. 15th AV

N.W. 12th AV
LOT 4

N.W. 11th AV
LOT 3



27-53-39

METROPOLITAN DADE COUNTY
PUBLIC WORKS DEPARTMENT

COUNTY
ZONING MAP

25-53-39

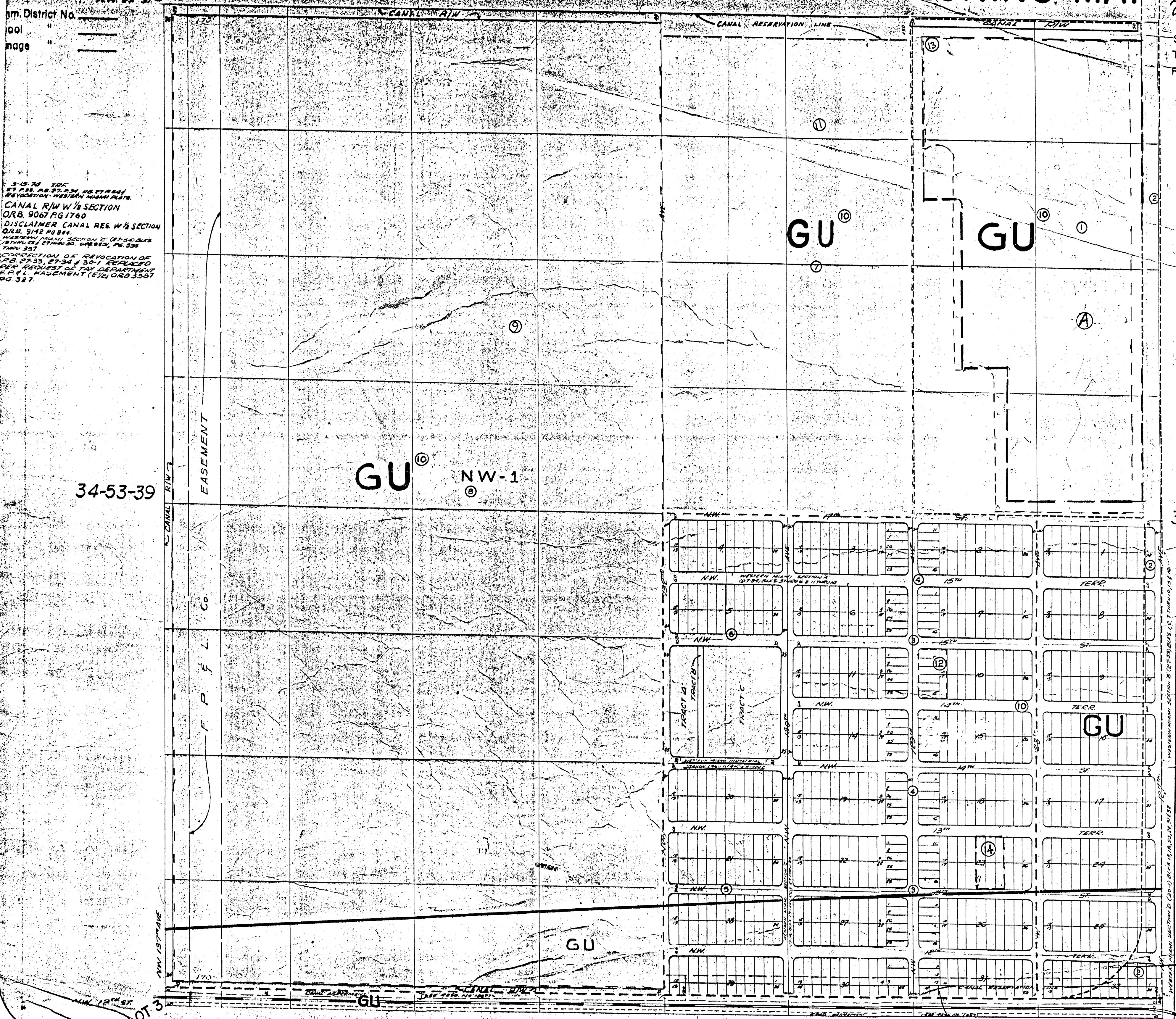
Dist. District No.
Pool
Image

SEC. 35
TWP. 53
RGE. 39

3-15-74
REV. 1-15-74
REVOCATION - WESTERN MIAMI PLATS
CANAL R/W W 1/2 SECTION
O.R.B. 9067 PG 1760
DISCLAIMER CANAL RES. W 1/2 SECTION
O.R.B. 9142 PG 844
WESTERN MIAMI SECTION C (27-54) O.R.B.
1804 PG 2744 SO. O.R.B. 9234 PG 325
T.M. 357
CORRECTION OF REVOCATION OF
P.B. 27-33, 27-34 & 30-1 REPLACED
BY REQUEST OF TAX DEPARTMENT
P.B. 6-1 EASEMENT (C/R) O.R.B. 3591
PG 327

34-53-39

36-53-39



ZONING MAP COUNTER

21-53-39
N.W. 41st ST.

22-53-39

23-53-39

Comm. District No.
School "
Drainage "

Sec 27
Twp 53
Rge 39

Redrawn: 6-20-77, H.G.B.
9-16-83 R.E.M. DISCLAIMER FOR CANAL RESERVATION
(N $\frac{1}{2}$, SE, SE) ORB 11481 Pg 1505
5-1-84 B.P.U. CANAL R/W S.E $\frac{1}{4}$ (NW 25th ST)
ORB 11977-Pg 1461.
5-1-84 B.P.U. DISCLAIMER FOR CANAL RESERVATION
(S $\frac{1}{2}$, SE $\frac{1}{2}$, S.E $\frac{1}{4}$) ORB 11977-Pg 1467
5-3-84 B.P.U. DADE CO. DISCLAIMER CANAL RESERVATION
N $\frac{1}{2}$, E 130' ORB 12106-Pg 2692

28-53-39 N.W. 35th ST.

NW-1
①
GU
GP

26-53-39

N.W. 25th ST.

33-53-39
147th AV

34-53-39
142nd AV

35-53-39
137th AV

ZONING MAP

West Miami Park Section B (25-5) Blocks 1-8 24-53-39

22-53-39
N.W. 41st ST.

Redrawn: 6-20-77 H.B.B.
Revisions:

Sec 26
Twp 53
Rgn 39

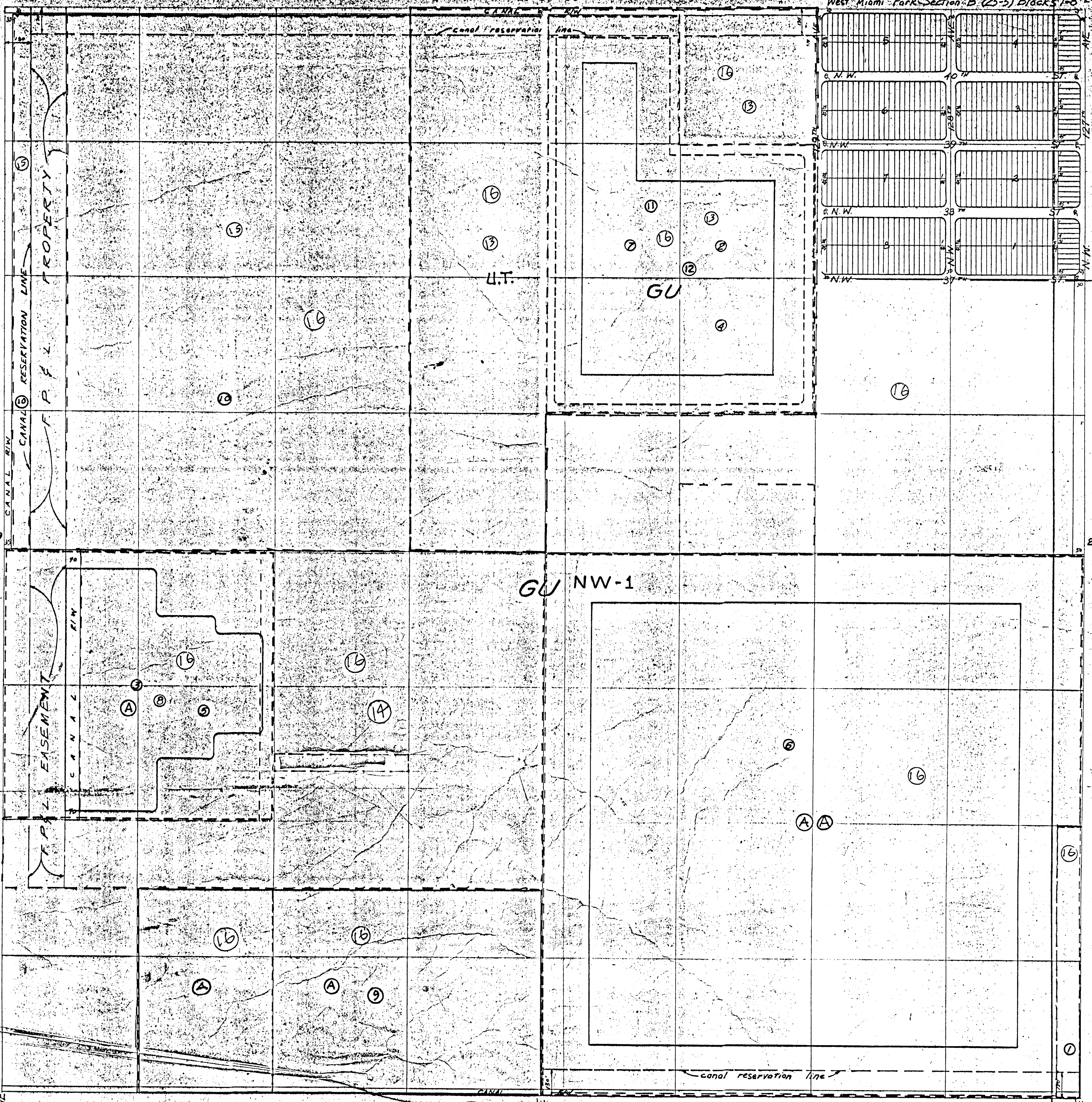
27-53-39
N.W. 33rd ST.

25-53-39

N.W. 25th ST.
34-53-39

35-53-39

36-53-39



ZONING MAP

SEC. 33-53-39

Lot 4
between
Sec. 33-53-39
and
Sec. 4-54-39

32-53-39

34-53-39

GU

LOT 4

Lot 3

5-54-39

3-54-39

SEC. 4-54-39

DADE COUNTY ENGINEERING DEPARTMENT.

DADE COUNTY, FLORIDA.

ZONING MAP

SEC. 34-53-39

LOT 3
between
TWP. 53S. R. 39E.
and

Elevation line
137' AVE
P. 634
ORB 5255 P. 636

LOT 3

No TREND
12-21-90

300 SF

GU

R-8312-83
LEHIGH ARCHEOLOGICAL ZONE

LOT 2

WEST FLAGLER EXT.

SEC. 3-54-39

2-54-39

ZONING MAP

LOT 2
BETWEEN
SEC. 35-53-39
AND
SEC. 2-54-39

COUNTER

A
769'

SEC 35-53-39

36.5'

