

## Appendix R

### Clay/Barrier Soil Layer Borrow Sources




Soil Map—Dane County, Wisconsin  
(Link Borrow Site)






## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Dane County, Wisconsin

Survey Area Data: Version 19, Jun 8, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 14, 2020—Aug 4, 2020

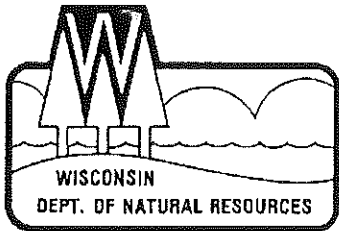
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

| Map Unit Symbol                    | Map Unit Name   | Acres in AOI | Percent of AOI |
|------------------------------------|---|--------------|----------------|
| DnB                                | Dodge silt loam, 2 to 6 percent slopes                  | 0.5          | 1.1%           |
| GwC                                | Griswold loam, 6 to 12 percent slopes                   | 2.1          | 4.1%           |
| PnA                                | Plano silt loam, till substratum, 0 to 2 percent slopes | 7.9          | 15.7%          |
| PnB                                | Plano silt loam, till substratum, 2 to 6 percent slopes | 23.4         | 46.5%          |
| RnB                                | Ringwood silt loam, 2 to 6 percent slopes               | 2.1          | 4.2%           |
| RoC2                               | Rockton silt loam, 6 to 12 percent slopes, eroded       | 10.8         | 21.5%          |
| ScB                                | St. Charles silt loam, 2 to 6 percent slopes            | 1.8          | 3.7%           |
| TrB                                | Troxel silt loam, 0 to 3 percent slopes                 | 1.6          | 3.2%           |
| <b>Totals for Area of Interest</b> |   | <b>50.4</b>  | <b>100.0%</b>  |





George E. Meyer  
Secretary

## State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

101 South Webster Street  
Box 7921

Madison, Wisconsin 53707

DNR TELEPHONE 608-266-2621

DNR TELEFAX 608-267-3579

DNR TDD 608-267-6897

SOLID WASTE MGMT 608-266-2111

SOLID WASTE TELEFAX 608-267-2768

**JUN 6 1995**

Mr. Kenneth Koscik, P.E.  
Dane County Public Works  
City-County Building  
210 Martin Luther King, Jr. Blvd  
Madison, WI 53709

FILE REF: FID# 113127300  
Dane County  
SW/Approval

SUBJECT: Modification to the Plan of Operation Approval for the  
Dane County Rodefild No. 2 Landfill Expansion, License  
#3018

Dear Mr. Koscik:

We have completed our review of the plan modification submittal for the Dane County Rodefild No. 2 Expansion. Based on our review we are issuing a modification to the plan of operation. The Department believes that the proposed modifications will not have an adverse effect on the performance of your landfill provided the conditions in the enclosed conditional plan of operation approval modification are fulfilled. You should attach this conditional plan of operation approval modification directly to the plan of operation approval issued on March 14, 1994.

### Modifications to the Plan of Operation Approval - Link Clay Borrow Site

This modification identifies a clay borrow source located at the Kervyn and Helen Link property, for use in the construction of the four foot thick clay liner for the 11.4 acre Phase I expansion to the Rodefild landfill. An area of 18 acres will be excavated for a total clay volume of approximately 106,000 cubic yards. The clay meets the clay specifications listed in s. NR 504.5, Wis. Adm. Code.

### Modifications to the Plan of Operation Approval - Approval Conditions

Additionally, you proposed changes to a number of conditions of the March 14, 1994 Plan of Operation Approval related to membrane installation quality assurance. Our response to the proposed modifications to the conditions of the plan of operation approval include the following:

Condition 13 - We have modified 13c. and 13d. of this condition. We believe the conformance testing required by this condition is needed to provide assurance to the Department that the geomembrane material delivered to the facility meets the design specifications. We have modified the testing rate for geomembrane density and melt index from the previously required frequency of one test per 40,000 ft<sup>2</sup> to one test per 100,000 ft<sup>2</sup>. We have also modified the requirement for environmental stress cracking in 13d. to allow the substitution of environmental stress cracking results performed by the geomembrane manufacturer on the resin that was used to produce the



geomembrane delivered to the landfill.

Condition 14 - We have removed the requirement that 25% of the test seams be sent to a laboratory for tensile strength testing. We have also increased the number of required prequalification seams from one at start up to two.

Condition 15d. - We have modified this requirement. We changed the requirement for calibration of the tensile testing machine from "within 60 days" to "within 3 months" of the start of geomembrane installation. We are also requiring that only electrically controlled tensile testing machines be used.

The attached approval modifies the conditions as stated above.

If you have any questions regarding this approval, please contact Dave Carper, Environmental Engineer, at (608)267-6823, or Mike Degen at (608)275-3208.

Sincerely,



Lakshmi Sridharan, Ph.D., P.E., Chief  
Solid Waste Management Section  
Bureau of Solid & Hazardous Waste Management

cc: Joe Brusca/Mike Degen - SD  
Scott Otterson - Rust Environmental & Infrastructure



BEFORE THE  
STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

CONDITIONAL PLAN OF OPERATION  
APPROVAL FOR THE  
DANE COUNTY LANDFILL EXPANSION RODEFELD No. 2 (#03018)

FINDINGS OF FACT

The Department finds that:

1. Dane County operates the Rodefild Landfill, a non-hazardous solid waste disposal facility located in the N 1/2 of Section 25, Section 25, T7N, R10E, City of Madison, Dane County, Wisconsin.
2. A Conditional Plan of Operation Approval was issued by the Department for the facility on August 14, 1984.
3. A Plan of Operation Approval for the Dane County Rodefild No. 2 Expansion was issued by the Department on March 14, 1994.
4. On March 3, 1995, Dane County submitted a request to the Department for a modification to the conditional plan of operation approval. The proposed modifications include changes to the conditions of approval and a report containing identification and characterization of a potential borrow source located at the Kervyn and Helen Link property, in part of the West 1/2 of the Southeast 1/4, and part of the Southwest 1/4 of the Northeast 1/4 of Section 33, Township 7N, Range 11E, Town of Cottage Grove, Dane County, Wisconsin.
5. The information submitted in connection with the modification included a cover letter and report entitled "Proposed Link Clay Borrow Site", prepared by Dane County, dated March 3, 1995 and received by the Department March 3, 1995.
6. Additional documents considered in the review of the modification include the following:
  - a. The August 14, 1984 Conditional Plan of Operation Approval with subsequent modifications.
  - b. The March 14, 1994 Plan of Operation Approval for the proposed Dane County Rodefild Landfill expansion.
  - c. Department correspondence and plan files for the Dane County Rodefild No. 2 Landfill (#3018).
7. The special conditions set forth below are needed to assure that the site is constructed in accordance with approved plans.



## CONCLUSIONS OF LAW

1. The Department has authority under s. 144.44(3), Stats., to modify a plan of operation approval if the modifications would not inhibit compliance with Chapters NR 500-520, Wis. Adm. Code.
2. The Department has authority to approve a plan with special conditions if the conditions are needed to ensure compliance with Chapters NR 500-520, Wis. Adm. Code.
3. The conditions of approval set forth below are needed to ensure compliance with Chapters NR 500-520, Wis. Adm. Code.
4. In accordance with the foregoing, the Department has authority under s. 144.44 Stats., to issue the following conditional closure plan approval modification.

## CONDITIONAL PLAN OF OPERATION APPROVAL MODIFICATION

The Department hereby modifies the closure plan approval for the Dane County Rodefild No. 2 Landfill, Inc. (License #2004), subject to the following conditions:

1. During excavation at the borrow source, all applicable sections of the Department's April 1989 Publication WR-222-89 "Wisconsin Construction Site Best Management Practice Handbook" shall be followed.
2. A certified soil technician, geologist or engineer shall be present at the Link property at all times during the borrow source excavation to ensure that acceptable material is separated from unacceptable material and that the liner and cap meets the specifications contained in the Department's August 20, 1984 Plan of Operation Approval and its subsequent modifications.
3. Areas in the borrow source where the clay is less than 2 feet thick shall not be used in the construction of the cap or liner at the Dane County Rodefild No. 2 landfill.
4. Effective erosion control measures, including but not limited to silt fence and straw bales, shall be used to eliminate all sedimentation of nearby wetlands and streams.

Modification of Conditions of the March 14, 1994 Plan of Operation Approval

5. Condition 13c. of the plan of operation approval is modified as follows: Geomembrane density and melt index of the polymer shall be tested at a rate of one test per 100,000 ft<sup>2</sup> of geomembrane installed and a minimum of one test on rolls from each batch of resin used to manufacture rolls delivered on site.



6. Condition 13d. of the plan of operation approval is modified as follows: Geomembrane environmental stress cracking resistance documentation shall be provided which shows that the manufacturer performed a minimum of one test for each batch of resin used to manufacture rolls delivered to the site.
7. Condition 14 of the plan of operation approval is modified as follows: Pre-qualification tests for geomembrane fusion welding machines shall be conducted by a minimum of two prequalification seams run per welding machine at the start up of each day by each seaming technician performing membrane welding, with additional test runs following work interruptions, weather changes or as directed by the quality assurance engineer of qualified technician. At start up, extrusion welding machine performance shall be verified by a minimum of two test seams per day per machine with additional testing as directed by the quality assurance engineer or qualified technician. Test results shall be collated for documentation along with notes on date, ambient temperature, technician and seaming machine used to make the seam, and results of field tests. These results shall be submitted with the construction documentation report.
8. Condition 15d. of the plan of operation approval is modified as follows: Field shear and peel tests of seams and membranes shall be performed using specified specimen sizes in tensile testing machines. The tensile testing machine shall be equipped with electrically controlled and smoothly moving jaw separation apparatus, capable of adjustments and defined settings for jaw separation rate, and displaying jaw separation rates and tensile loadings exerted on the geomembrane samples. Tensile testing machines shall be accompanied by documentation for calibration conducted within 3 months of the start of geomembrane installation. Geomembrane samples shall be prepared for field analyses by use of templates and cutting tools that prepare uniformly sized samples.

The Department retains the jurisdiction either to require the submittal of additional information or to modify this approval at any time if, in the Department's opinion, conditions warrant further modifications. Unless specifically noted, the conditions of this approval do not supersede or replace any previous conditions of approval for this facility.



NOTICE OF APPEAL RIGHTS

If you believe that you have a right to challenge this decision, you should know that Wisconsin statutes and administrative rules establish time periods within which requests to review Department decisions must be filed.

For judicial review of a decision pursuant to sections 227.52 and 227.53, Stats., you have 30 days after the decision is mailed, or otherwise served by the Department, to file your petition with the appropriate circuit court and serve the petition on the Department. Such a petition for judicial review shall name the Department of Natural Resources as the respondent.


This notice is provided pursuant to section 227.48(2), Stats.

Dated: JUN 6 1975

DEPARTMENT OF NATURAL RESOURCES  
For the Secretary,



Lakshmi Sridharan, Ph.D., P.E., Chief  
Solid Waste Management Section  
Bureau of Solid & Hazardous Waste Management



David L. Carper, Engineer  
Solid Waste Management Section





## Department of Public Works

115 West Doty Street Room 2144  
Madison, Wisconsin 53703-3202  
Telephone: 608-266-4018  
Fax: 608-267-1533

DANE COUNTY

**OFFICE COPY**

March 3, 1995

Lakshmi Sridharan, Ph.D., P.E., Chief  
Solid Waste Management Section, Bureau of Solid & Hazardous Waste Management  
Department of Natural Resources  
101 South Webster Street  
Box 7921  
Madison, WI 53707

RE: Modification to Plan of Operation Approval for the Dane County  
Rodefald No. 2 Landfill Expansion, License #3018

Dear Ms Sridharan:

Enclosed for your review are 3 copies of the following modifications to the referenced approval:

1. Proposed Alternate Clay Borrow Site Identification and Characterization (attached).
2. Proposed changes to conditions of the March 14, 1994, Plan of Operation Approval as discussed below.

**Condition No. 13 (c) & (d):**

Dane County proposes that geomembrane density shall be tested at a minimum rate of one per 100,000 ft<sup>2</sup> of geomembrane installed. Dane County also proposes that the melt index of the polymer (resin) and the environmental stress cracking resistance shall be tested for each batch of resin as part of the quality control testing by the manufacturer and included in the final documentation report instead of every 40,000 ft<sup>2</sup> and 200,000 ft<sup>2</sup> respectively.

**Condition No. 14:**

The Plan of Operation Approval requires twenty-five percent (25%) of the test seams to be laboratory tested for conformation of shear and peel performance of the seam. Dane County requests that this condition (requiring 25% of test seams be sent in for laboratory testing) be removed as a requirement for geosynthetic installation. From a constructability standpoint, this requirement may result in delays during critical construction phases. The function of performing trial welds is primarily to verify the fusion machine is working properly before seaming the liner. The pre-qualification tests (i.e. trial welds) conducted prior to the start of actual field seams are adequate in determining that the fusion machine is working properly and determining the acceptability of seams. The laboratory destructive seam testing program is to verify the integrity of the overall installation. In addition, as an internal in-field quality control check, the installer



will generally destructively sample and field test a portion of membrane from the beginning and ends of each field seam. This process is used to immediately identify any problems associated with the production of field seams and correct those problems.

**Condition 15 (d):**

The Plan of Operation Approval requires calibration of the tensile testing machines within 60 days of the start of geomembrane installation. The installer's usual procedure is to calibrate the machines yearly as an acceptable industry standard. Tensiometer laboratory testing on a more frequent basis is not recommended due to costs of equipment transportation and handling, in addition to the time it takes to calibrate the machine when it is needed in the field. The present condition would require the installer to calibrate the machine in between every installation when installation crews typically travel from one job to the next. Dane County proposes that this condition be revised to provide a calibration frequency of 6 months prior to geomembrane installation.

Your timely response to this plan modification request is greatly appreciated. If you have any questions, please call me at 266-4029.

Sincerely,

DANE COUNTY DEPARTMENT OF PUBLIC WORKS



Gerald J. Mandli, P.E.  
Solid Waste Manager

cc: David L. Carper (WDNR)  
Lynn Hummel (WDNR Southern District)  
Scott Otterson (RUST -Sheboygan)  
Steve Peterson (RUST -Sheboygan)  
Abdullah Younes (RUST -Job site)



## 1. PROPOSED LINK CLAY BORROW SITE

### 1.1 Introduction

The plan of operation for the Dane County Landfill Expansion Rodefild Site No. 2 dated November 1993 and the subsequent approval letter dated March 14, 1994 require the use of the Farm Credit Bureau Clay Borrow Site in the Town of Westport as the source for off-site clay for liner and cap construction. Because of the long haul distance involved with using the Farm Credit Bureau Site, Dane County Public Works Department has sought to identify an additional clay borrow source that is closer to the Rodefild Landfill (see Plan Sheet 1). The process of identifying and characterizing the proposed Link clay borrow source was done in accordance with NR 512.18, Wis. Adm. Code. The proposed site has also been evaluated to assure compliance with the performance standards specified in NR 504.04(4)(a)(b) and (c), Wis. Adm. Code.

To identify clay resources which meet the project specifications and contain the clay volume required, a subsurface investigation and subsequent lab analyses of collected samples was conducted for the potential clay borrow source. Twenty-four backhoe pits were dug at the 18-acre site during December 1994 with the subsequent lab analyses being completed during February 1995. The clay from the proposed Link borrow site will initially be used for the construction of the liner for Phase I of the Rodefild expansion during the spring of 1995. The clay will meet the clay specifications contained in NR 504.05:

- (a) A minimum of 50% by weight which passes the 200 sieve (P200).
- (b) A clay size content of 25% by weight or greater.
- (c) A saturated hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less.
- (d) A liquid limit of 30% or greater.
- (e) A plasticity index of 15% or greater.
- (f) Compacted to 90% modified or 95% standard Proctor density or greater.

The clay from the proposed Link borrow site will be used to construct the four foot thick compacted clay liner for the 11.4 acre Phase I expansion to the Rodefild Landfill. It is estimated that this liner will require approximately 85,000 cubic yards of compacted clay. Applying a 25% increase to this volume estimate to allow for shrinkage and losses during hauling and placement, as well as excavation losses from separating usable and unusable materials, results in a total required clay volume of 106,000 cubic yards. Based on a 18 acre borrow site and the clay thicknesses measured during the subsurface investigation, the estimated quantity of clay available at the Link borrow site is 150,000 cubic yards. A clay isopach map of the site based on observed clay thicknesses at the test pits is presented on Plan Sheet 2.

Prior to conducting the subsurface investigation at the proposed Link clay borrow site, Dane County contacted the DNR district office and arranged for an initial site inspection. Dave Carper of the DNR central office and Lynn Hummel of the DNR Southern District Office met with Al Czecholinski from Dane County Department of Public Works on December 1, 1994 for the initial site inspection. The DNR personnel agreed that the site was in compliance with all applicable performance standards, and that Dane County could proceed with the site characterization study. The site was also assessed by the Wisconsin Department of Agriculture, Trade, and Consumer Protection, the WDNR Bureau of Endangered Resources, and the State Historical Society of Wisconsin. Copies of their letters are found in Appendix B. In addition, the necessary approvals from Dane County Zoning have been obtained.

### 1.2 Characterization of the Link Borrow Source

The proposed borrow source is part of a 77 acre parcel located in part of the W1/2 of the SE 1/4, and part of the SW1/4 of the NE1/4 of Section 33, Township 7N, Range 11E, Town of Cottage Grove, Dane County, Wisconsin. The location of the site is shown on Plan Sheet 1. The land is currently owned by



Dane County. The clay will be extracted from approximately 18 acres of land that has previously been used for row-crop agriculture..

During December 1994, Dane County personnel excavated 24 backhoe pits at approximately 200 foot intervals after a 200-foot grid system was established within the property boundaries. Two representative samples were taken from each test pit and a lab testing program was conducted on the samples by Ashco, Inc. Soil test locations are shown on Plan Sheet 3.

The lab analyses included grain size distribution to the 0.001 mm particle size and Atterberg limits on all of the samples. In addition, moisture-density relationship (Modified Proctor) and compaction-permeability relationship tests were performed on selected samples. Results of all lab analyses of the samples obtained at the Link site are contained in the attached soil testing report prepared by Ashco, Inc. A total of 48 grain size analyses, 48 Atterberg limits, 7 moisture-density relationship and 3 compaction-permeability relationship tests were performed on the samples taken at the site.

Based on the field logs of the test pits, the subsurface profile at the site consists of, in descending order, a variable thickness of silt loam topsoil over brown and mottled-brown lean clay. The soil types present at the proposed site are classified by the USDA Soil Conservation Service as the Plano and Radford silt loams. Although it varied in thickness, the clay stratum was continuous over the entire site. The geologic origin of the clay stratum is interpreted as aeolian, or wind deposited materials. These wind-blown deposits, or loess, consisting of primarily silt and clay size particles were picked up by wind as glacial ice retreated and redeposited over previous glacial deposits. These underlying glacial materials consist of poorly sorted, unstratified glacial till or sand and gravel (outwash) deposits. While the soils covering most of the site were formed in the loess deposits, several acres near the center of the site, the Radford soils, contain soils in which both the former A-horizon plus the underlying clay strata are buried under more recently deposited silty alluvium.

As shown in Table 1, the soil sample test results indicate that the clay at the site is primarily a low to medium plasticity clay, classified as CL soil by the Unified Soil Classification System. The shallow clay sample taken from a test pit was labeled Sample No. 1 with the deeper sample designated as No. 2. For test pits where moisture-density or compaction-permeability tests were performed, Sample No. 1 was a composite of sample taken from the entire clay thickness with Sample No. 2 continuing to be a deep sample. Compaction-permeability relationship curves developed on 3 clay samples indicate that the clay meets specifications for permeability criteria when properly compacted at a moisture content at or above the optimum moisture content of the soil (see Table 2).

A clay isopach map (see Plan Sheet 2) was prepared from clay thickness data obtained during the site investigation and on the lab test results. It is estimated that 150,000 cubic yards of clay soil could be extracted from the 18 acre borrow site.

### 1.3 Laboratory Testing Frequency Summary

The following testing is required by NR 512.18:

- (a) Ten test pits for the first 5 acres and one test pit for each additional acre or less.
- (b) A minimum of 2 samples from each pit shall be collected and tested for grain size distribution to the 0.002 millimeter particle size and Atterberg limits.
- (c) A minimum of 5 samples for the first 10 acres and one additional sample per acre or less shall be tested for moisture-density using a 5 point Proctor curve.
- (d) A minimum of 20% of the samples used to develop the Proctor curves shall be used to determine the compaction-permeability relationship.
- (e) All samples shall be classified according to the Unified Soil Classification System.



Based on the above test frequency requirements, comparison of the number of tests required and the number performed at the proposed 18 acre Link borrow site is shown below:

|           | <u>Test<br/>Holes</u> | <u>Atterberg<br/>Limits</u> | <u>Grain Size<br/>Analyses</u> | <u>Proctor<br/>Curves</u> | <u>Compaction-<br/>Permeability<br/>Relationships</u> |
|-----------|-----------------------|-----------------------------|--------------------------------|---------------------------|---|
| Required  | 23                    | 46                          | 46                             | 7                         | 2   |
| Performed | 24                    | 48                          | 48                             | 7                         | 3   |

A review of the number of test pits and the number of lab analyses performed indicates that the soil testing requirements were met.

#### 1.4 Borrow Area Development and Material Removal

The Link clay borrow area will be developed in phases, in order to minimize erosion and associated sedimentation problems, as well as to prevent the double handling of topsoil to the maximum extent possible. A temporary sedimentation basin and other erosion control measures will be installed during the initial stages of borrow area development to minimize the impact of erosion of on-site soils which have been disturbed by borrow area operations.

The clay extraction/reclamation plan consists of the following work to be done during 1995.

1. Beginning in March 1995, erect truck entrance signs on USH 12/18 in accordance with the WDOT.
2. Improve the existing field entrance with breaker run for use as the construction entrance. The entrance will be approximately 24 feet wide and will be secured with a gate as required.
3. A sedimentation basin, approximately 125 feet by 125 feet by 4 feet deep, will be constructed in the location shown on Plan Sheet 4. The soil materials excavated from the basin will be used to construct a berm parallel to USH 12/18. In addition, 100 linear feet of silt fence with steel posts and woven wire support will be installed to prevent site erosion.
4. Phase I will consist of stripping the topsoil on the west half of the site and stockpiling it on the east half. The clay layer will then be extracted from the west half. After clay extraction, the west half of the site will be regraded and the topsoil shall be replaced.
5. Phase II consists of the removal and stockpiling the topsoil followed by clay extraction on the east half of the site. After the clay extraction is complete, the east half shall be reclaimed by regrading, replacing the topsoil, and seeding the site. The sedimentation basin area will be reclaimed such that a permanent pond shall not be created. All excavation and reclamation work at the site shall be completed by the end of 1995.

The clay removal operations will be accomplished using conventional methods. The topsoil will be removed and stockpiled using scrapers. The suitable clay soils will be removed using a backhoe and loaded on trucks for transportation to the landfill site. The material will be deposited directly at locations where required during the construction of the liner. Some disking and/or scarifying of the clay may be required to lower the natural moisture content to levels necessary to achieve the specified compaction. The moisture content at compaction will be maintained at or above optimum moisture.

The borrow activities will be monitored in the field to assure the segregation of suitable clay soils from material not meeting project specifications. Quality control will be maintained primarily by visually observing clay and non-clay materials and their transition with depth as the usable material is removed. In cases where visual differentiation of materials is uncertain, soil samples will be obtained for lab verification testing. In addition, soil testing of the clay as it is placed will be conducted in accordance with NR 516.05 for Atterberg limits, grain size distribution, Shelby tube permeability, and compaction-permeability. Material which is considered unsuitable for use will be segregated and eventually used as fill dirt for grading purposes.



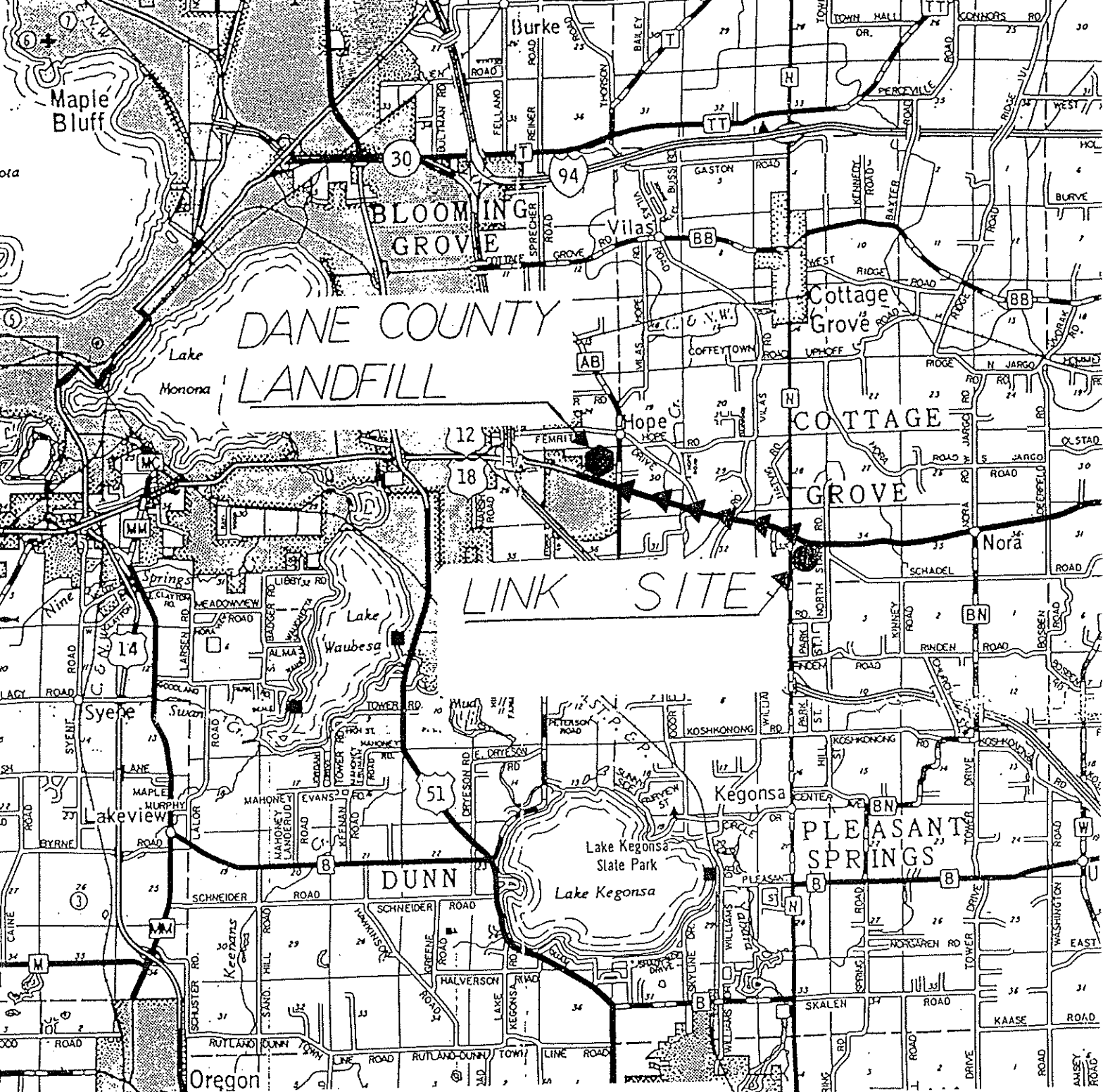
### 1.5 Transportation

Clay soils removed from the proposed Link borrow source will be hauled by truck from the borrow site to Dane County Landfill Site No. 2 (Rodefild). The trucks will travel approximately 3 miles on U.S. Highway 12/18 from the Link site to the landfill (see Plan Sheet 1).

### 1.6 Restoration

Borrow area restoration will begin immediately following clay removal operations. Once the removal operations are completed, grades will be established for maintaining positive surface water drainage and sedimentation control. The movement of surface waters from the restored site will continue to be toward the north/northeast through the culvert under U.S. Highways 12/18 as it is at present. Upon completion of the site grading, topsoil will be restored by uniformly spreading a minimum of 6 inches of topsoil over all excavated areas. After the topsoil is spread, the area will be fertilized in accordance with N-P-K requirements recommended by soil test results. WDOT Seed Mixture No. 1 (Kentucky Bluegrass 45%, Creeping Red Fescue 35%, Perennial Rye Grass 5%, and White Clover 15%) will be sown at a rate of 150 lbs/acre on all disturbed areas. All seeded areas will be mulched using straw/hay or else hydromulched using a manufactured biodegradable recycled paper mulch. Replanting shall be done as necessary to produce a uniform stand of grass.





PROPOSED LINK CLAY BORROW SITE

LOCATION MAP

SCALE 1" = 2 MILES

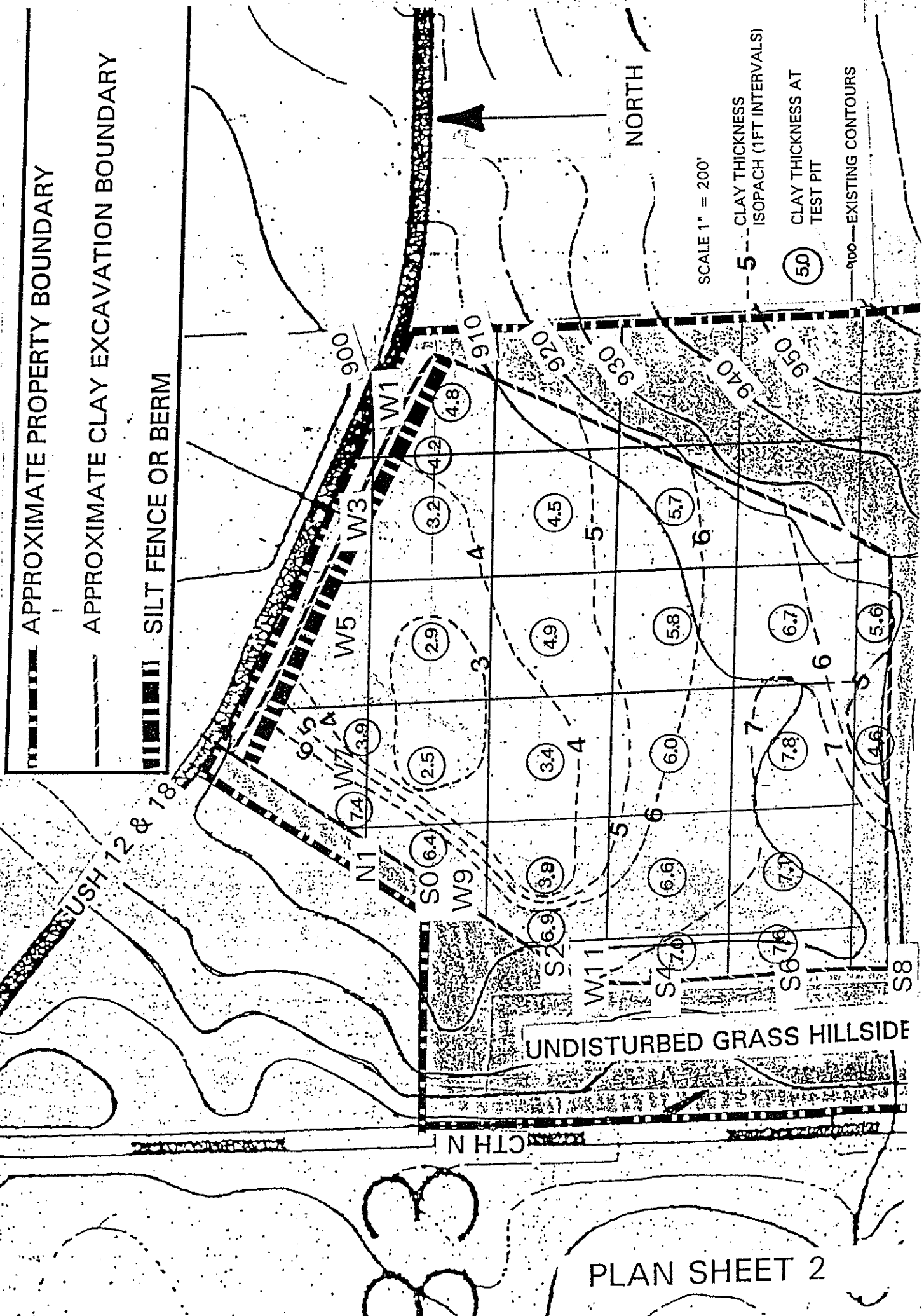
▲▲ = PROPOSED TRUCK ROUTE

NORTH

PLAN SHEET 1



# PROPOSED LINK CLAY BORROW SITE ISOPACH MAP





# PROPOSED LINK CLAY BORROW SITE SOIL TESTING LOCATIONS

APPROXIMATE PROPERTY BOUNDARY

APPROXIMATE CLAY EXCAVATION BOUNDARY

SILT FENCE OR BERM

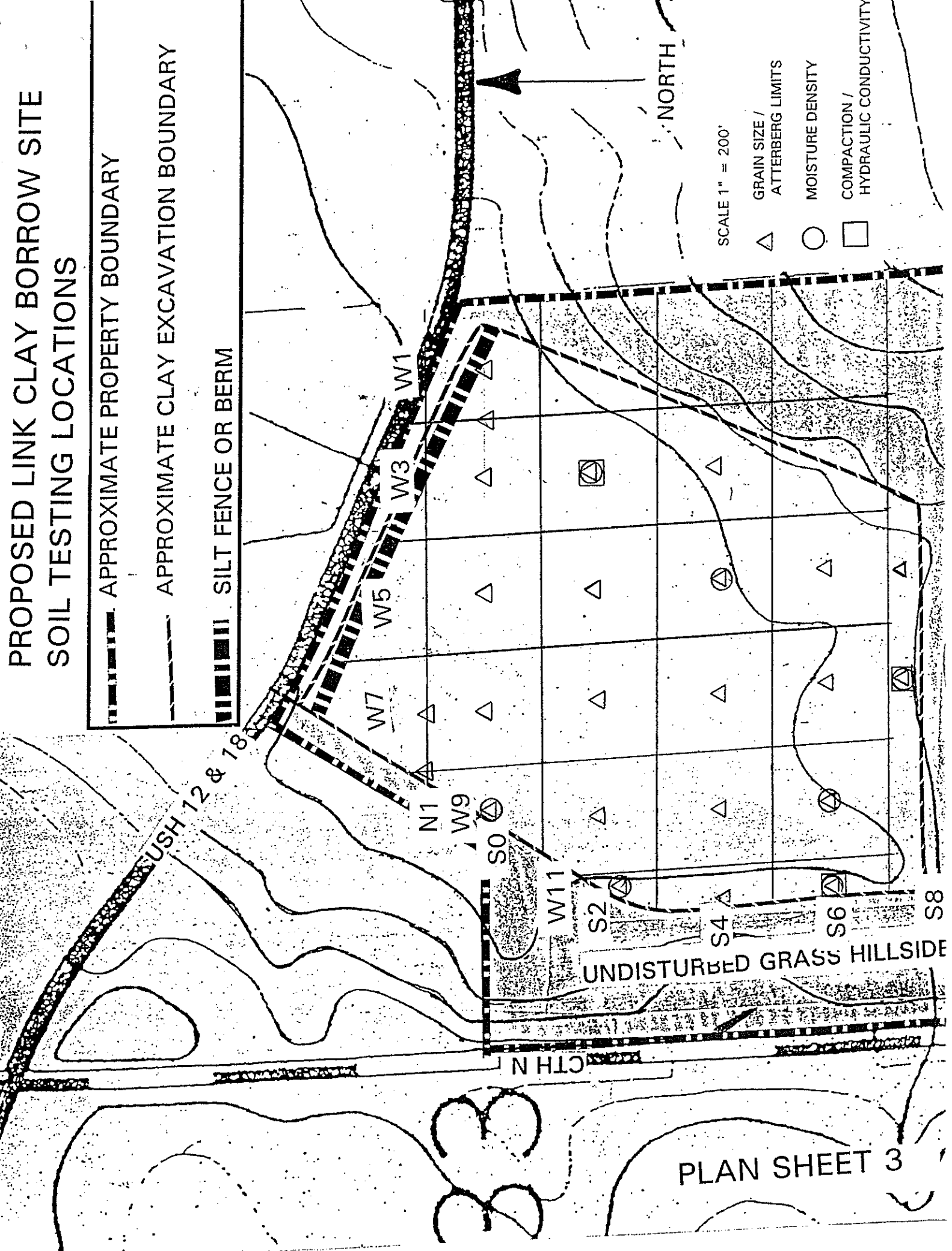
SCALE 1" = 200'

GRAIN SIZE /  
ATTERBERG LIMITS

MOISTURE DENSITY

COMPACTION /  
HYDRAULIC CONDUCTIVITY

NORTH

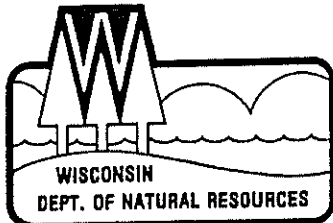


PLAN SHEET 3



# APPENDIX A





George E. Meyer  
Secretary

# State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Southern District Headquarters  
3911 Fish Hatchery Road  
Fitchburg, Wisconsin 53711  
TELEPHONE 608-275-3266  
TELEFAX 608-275-3338

December 6, 1994

File Ref: FID#113127300  
Dane Co./SW/Inspection

Mr. Allan Czecholinski, Hydrogeologist  
Dane County Dept. of Public Works  
115 West Doty St., Room 2144  
Madison, WI 53703

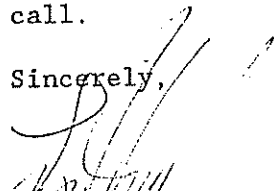
SUBJECT: Initial Site Inspection of Alternate Clay Borrow Site

Dear Mr. Czecholinski:

On Thursday, December 1, 1994, Dave Carper (WDNR) and I inspected a proposed clay borrow site located in the SW $\frac{1}{4}$  of the NE $\frac{1}{4}$  of Section 33, Town of Cottage Grove Dane County, for compliance with Chapter NR 500, Wisconsin Administrative Code, Solid Waste Management. As a result of that inspection, it appeared that this borrow site would comply with the requirements of ch. NR 500, Wis. Adm. Code.

If you have any questions concerning this letter, please feel free to write or call.

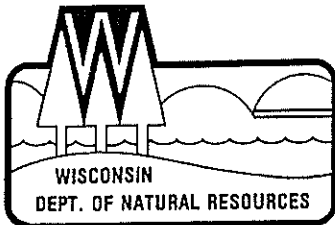
Sincerely,

  
Lynn Hummel

Solid and Hazardous Waste Investigator  
Telephone: (608) 275-3213

LH:lh  
A\DCLF.CBS





George E. Meyer  
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

101 South Webster Street  
Box 7921  
Madison, Wisconsin 53707  
TELEPHONE 608-266-2621  
TELEFAX 608-267-3579  
TDD 608-267-6897

December 20, 1994

IN REPLY REFER TO: 1650

Mr. Allan Czecholinski  
Dane County Public Works Department  
115 West Doty Street, Room 2144  
Madison, WI 53703

SUBJECT: Endangered Resources Information Review (Log Number 94-359)

Dear Mr. Czecholinski:

The Bureau of Endangered Resources has reviewed the project area described in your letter of November 28, 1994 for the proposed removal of clay soils in the Town of Cottage Grove. The clay is needed to construct a liner for a new Phase at the Dane County Rodefild Landfill.

Our Natural Heritage Inventory (NHI) data files contain no occurrence records of Endangered, Threatened, or Special Concern species or natural communities, nor of any State Natural Areas that I believe would be impacted by the project as currently proposed. The clay soil removal is proposed to be located in T7N R11E Section 33, Dane County.

Although there are no records in the NHI database of endangered resources occurring at the project site, comprehensive endangered resource surveys have not been completed for the project area. As a result, our data files may be incomplete. However, given your description of the project site and the nature of the proposed project I do not believe that further surveys are warranted.

This letter is for informational purposes and only addresses endangered resource issues. This letter does not constitute Department of Natural Resources authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the Department.

Please contact John Pohlman at (608) 264-6263 if you have any questions about this information.

Sincerely,

*Charles M. Pils*

Charles M. Pils  
Director, Bureau of Endangered Resources

cc: Bob Roden - EA/6  
Harold Meier - SD  
Carl Batha - SD  
Dave Carper - SW/3

jdp:CMF/[erir.sw]swcbctgr.12



Printed on  
Recycled  
Paper





Division of Historic Preservation

## State Historical Society of Wisconsin

816 State Street • Madison, Wisconsin 53706-1488  
☎ (608) 264-6500 • FAX (608) 264-6404

December 29, 1994

Mr. Allan Czecholinski  
Department of Public Works  
115 West Doty Street, Room #2144  
Madison, Wisconsin 53703

**IN REPLY PLEASE REFER TO SHSW: #94-1783/DA**  
**RE: Proposed Clay Borrow Site for Rodefild Landfill**

Dear Mr. Czecholinski:

We have searched our records for properties of architectural, historical or archeological significance in the referenced project area in accordance with Wis. Stat. §44.40 (1991).

We believe the project as described in your correspondence will not affect any structures that are listed in the State or National Registers, the Wisconsin Inventory of Historic Places, or on a list of locally designated historic places.

Site #BDA-237, (Mary Black Burial Site) is located on top of a hill, identified by a monument surrounded by a stone fence. Enclosed for your information please find a copy of your project area map showing the location of the burial site. We request, therefore, that the project area be surveyed by a qualified archeologist to locate and to mark its boundaries to ensure that the site is not affected by the proposed project.

Please provide this office with a copy of the archeologist's report indicating that the above survey and identification have been carried out. Please ensure that the archeologist's report is accompanied by our project identification number (SHSW# 94-1783/DA).

With any questions, please contact me at (608) 264-6508. Thank you for your attention to this matter.

Sincerely,

Chip Harry L. Brown III, J.D.  
State Compliance Coordinator

CHLB:lks  
Enclosure  
cc: Stan Druckenmiller, DNR





State of Wisconsin  
Department of Agriculture, Trade and Consumer Protection

Alan T. Tracy, Secretary

801 West Badger Road • PO Box 8911  
Madison, WI 53708-8911

January 6, 1994

Allan Czecholinski  
Solid Waste Engineer/Hydrogeologist  
Dane County Public Works  
217 South Hamilton Street, Suite 400  
Madison, WI 53703

Dear Mr. Czecholinski:

Re: Proposed Clay Extraction Site  
Kervyn and Helen Link Property  
Town of Cottage Grove, Dane County

The Department of Agriculture, Trade, and Consumer Protection (DATCP) has reviewed the notification and any supplemental information you have provided concerning the potential need for an agricultural impact statement (AIS) for the above project. We have determined that an AIS **will not** be prepared for this project.

Please note that if the proposed project or project specifications are altered in any way which could be construed as increasing the potential adverse effects of the project on agriculture or on any farm operation, the DATCP should be renotified. Questions on the AIS program can be directed to me at the above address or by dialing 608/273-6419.

Sincerely,

Peter Nauth  
Agricultural Impact Program



ASHCO INC.

P.O. BOX 372  
WAUSAU, WI 54402-0372

February 23, 1995

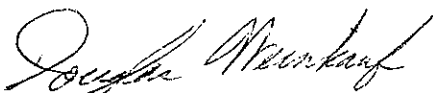
Mr. Al Czecholinski  
Dane County Public Works Department  
115 West Doty Street  
Room 2144  
Madison, WI 53703-3202

Dear Mr. Czecholinski

Enclosed is the testing results for the Link Property Borrow Site. The grain size analyses were conducted in accordance with ASTM D422-63 (Reapproved 1990). The Modified Proctor analyses were done in accordance with ASTM D1557-91 Procedure A. The Atterberg Limits were done in accordance with ASTM D4318-93. The permeability testing was conducted using the falling head test.

We appreciate the opportunity to assist you with this project. If you have any questions, please call me at 715-848-3557.

Sincerely,  
ASHCO, Inc.



Douglas L. Weinlauf, P. E.  
President



# APPENDIX B



TABLE 1 NATURAL MOISTURE AND ATTERBERG LIMITS

| <u>Coordinates</u>       | <u>Natural<br/>Moisture Content (%)</u> | <u>Liquid<br/>Limit</u> | <u>Plastic<br/>Limit</u> | <u>Plasticity<br/>Index</u> | <u>USCS<br/>Classification</u> |
|--------------------------|---|-------------------------|--------------------------|-----------------------------|--------------------------------|
| N1,W 7 #1                | 30.4                                    | 48                      | 16                       | 32                          | CL                             |
| N1,W 7 #2                | 34.6                                    | 38                      | 21                       | 17                          | CL                             |
| N1,W 8 #1                | 28.8                                    | 47                      | 25                       | 22                          | CL                             |
| N1,W 8 #2                | 23.6                                    | 42                      | 18                       | 24                          | CL                             |
| S0,W 1 #1                | 26.1                                    | 46                      | 21                       | 25                          | CL                             |
| S0,W 1 #2                | 23.3                                    | 47                      | 19                       | 28                          | CL                             |
| S0,W 2 #1                | 27.8                                    | 39                      | 18                       | 21                          | CL                             |
| S0,W 2 #2                | 21.2                                    | 29                      | 19                       | 10                          | CL                             |
| S0,W 3 #1                | 28                                      | 50                      | 19                       | 31                          | CL/CH                          |
| S0,W 3 #2                | 23.7                                    | 34                      | 19                       | 15                          | CL                             |
| S0,W 5 #1                | 28.9                                    | 47                      | 18                       | 29                          | CL                             |
| S0,W 5 #2                | 26.5                                    | 35                      | 21                       | 14                          | CL                             |
| S0,W 7 #1                | 32.8                                    | 66                      | 19                       | 47                          | CH                             |
| S0,W 7 #2                | 27.5                                    | 44                      | 19                       | 25                          | CL                             |
| S0,W 9 #1 (Proctor)      | 24.7                                    | 52                      | 22                       | 30                          | CH                             |
| S0,W 9 #2                | 28.5                                    | 41                      | 18                       | 23                          | CL                             |
| S2,W 3 #1 (Proctor/Perm) | 22.6                                    | 44                      | 16                       | 28                          | CL                             |
| S2,W 3 #2                | 22.2                                    | 36                      | 20                       | 16                          | CL                             |
| S2,W 5 #1                | 28.4                                    | 38                      | 19                       | 19                          | CL                             |
| S2,W 5 #2                | 25.0                                    | 51                      | 19                       | 32                          | CH                             |
| S2,W 7 #1                | 28.4                                    | 52                      | 22                       | 30                          | CH                             |
| S2,W 7 #2                | 29.0                                    | 48                      | 15                       | 33                          | CL                             |
| S2,W 9 #1                | 27.9                                    | 55                      | 18                       | 37                          | CH                             |
| S2,W 9 #2                | 30.0                                    | 44                      | 18                       | 26                          | CL                             |
| S2,W11 #1 (Proctor)      | 24.9                                    | 45                      | 20                       | 25                          | CL                             |
| S2,W11 #2                | 27.8                                    | 50                      | 16                       | 34                          | CL/CH                          |
| S4,W 3 #1                | 26.0                                    | 38                      | 18                       | 20                          | CL                             |
| S4,W 3 #2                | 24.4                                    | 32                      | 16                       | 16                          | CL                             |
| S4,W 5 #1 (Proctor)      | 29.3                                    | 47                      | 18                       | 29                          | CL                             |



ASHCO, INC.

---

|        |                   |      |    |    |    |    |
|--------|-------------------|------|----|----|----|----|
| S4,W 5 | #2                | 27.1 | 39 | 19 | 20 | CL |
| S4,W 7 | #1                | 26.5 | 45 | 20 | 25 | CL |
| S4,W 7 | #2                | 29.2 | 47 | 19 | 28 | CL |
| S4,W 9 | #1                | 29.7 | 51 | 20 | 31 | CH |
| S4,W 9 | #2                | 31.0 | 40 | 17 | 23 | CL |
| S4,W11 | #1                | 28.0 | 53 | 17 | 36 | CH |
| S4,W11 | #2                | 26.9 | 40 | 20 | 20 | CL |
| S6,W 5 | #1                | 23.8 | 47 | 23 | 24 | CL |
| S6,W 5 | #2                | 25.0 | 44 | 17 | 27 | CL |
| S6,W 7 | #1                | 26.4 | 51 | 20 | 31 | CH |
| S6,W 7 | #2                | 23.9 | 35 | 20 | 15 | CL |
| S6,W 9 | #1 (Proctor)      | 27.0 | 47 | 20 | 27 | CL |
| S6,W 9 | #2                | 27.8 | 39 | 17 | 22 | CL |
| S6,W11 | #1 (Proctor/Perm) | 25.7 | 51 | 18 | 33 | CH |
| S6,W11 | #2                | 27.4 | 37 | 16 | 21 | CL |
| S8,W 7 | #1 (Proctor/Perm) | 24.4 | 42 | 18 | 24 | CL |
| S8,W 7 | #2                | 24.1 | 51 | 18 | 33 | CH |
| S8,W 5 | #1                | 25.4 | 52 | 23 | 29 | CH |
| S8,W 5 | #2                | 21.8 | 42 | 18 | 24 | CL |



TABLE 2 PROCTOR, PERMEABILITY  
DATA SUMMARY

| <u>% Moisture</u> | <u>Dry Density (lb/cft)</u> | <u>Permeability (cm/sec)</u> |
|-------------------|-----------------------------|------------------------------|
| S2 W3 #1          |                             |                              |
| 16.4              | 105.3                       | $6.9 \times 10^{-8}$         |
| 17.3              | 108.3                       | $1.0 \times 10^{-9}$         |
| 19.6              | 106.6                       | $1.5 \times 10^{-9}$         |
| 23.0              | 100.9                       | $1.1 \times 10^{-9}$         |
| 25.7              | 99.9                        | $4.3 \times 10^{-9}$         |
| S6 W11 #1         |                             |                              |
| 13.0              | 99.8                        | $2.2 \times 10^{-8}$         |
| 16.3              | 104.7                       | $4.7 \times 10^{-9}$         |
| 18.0              | 105.7                       | $2.6 \times 10^{-9}$         |
| 21.2              | 104.7                       | $3.1 \times 10^{-9}$         |
| 24.5              | 96.7                        | $2.2 \times 10^{-9}$         |
| S8 W7 #1          |                             |                              |
| 12.0              | 111.7                       | $1.9 \times 10^{-8}$         |
| 14.2              | 114.9                       | $4.1 \times 10^{-9}$         |
| 16.6              | 112.3                       | $3.3 \times 10^{-9}$         |
| 17.9              | 111.4                       | $3.1 \times 10^{-9}$         |
| 22.6              | 101.2                       | $5.0 \times 10^{-9}$         |

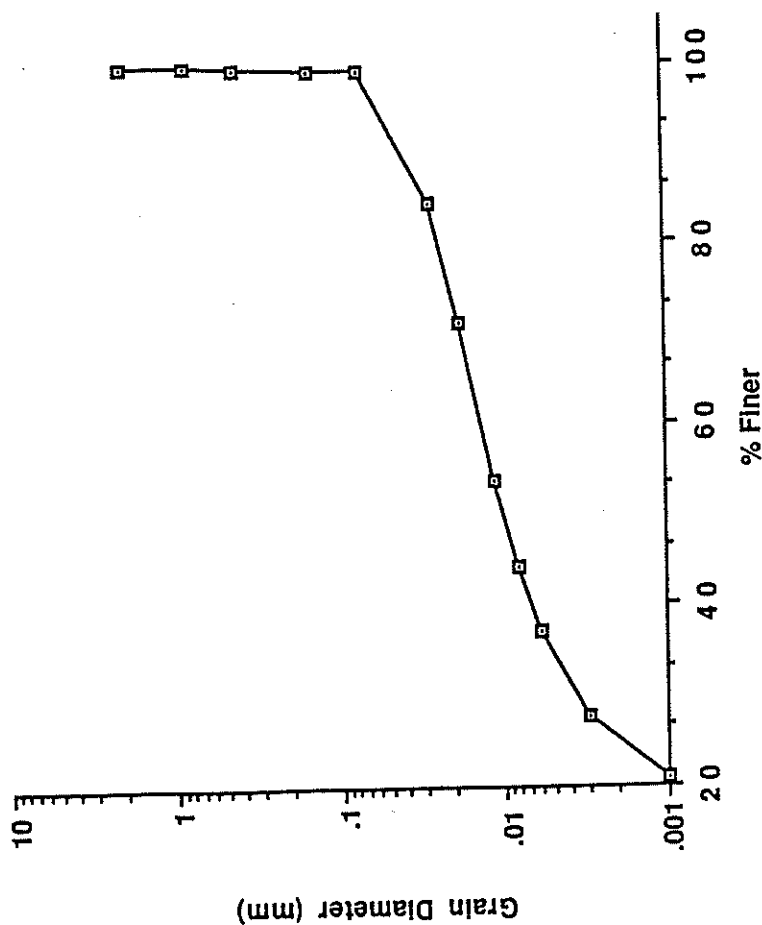


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 N1 W7  
Test Date: 1/23/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 99.8    |
| 0.420               | 99.6    |
| 0.150               | 99.5    |
| 0.075               | 99.4    |
| 0.027               | 84.5    |
| 0.018               | 71.1    |
| 0.011               | 53.7    |
| 0.008               | 44.3    |
| 0.006               | 37.3    |
| 0.003               | 27.6    |
| 0.001               | 20.8    |



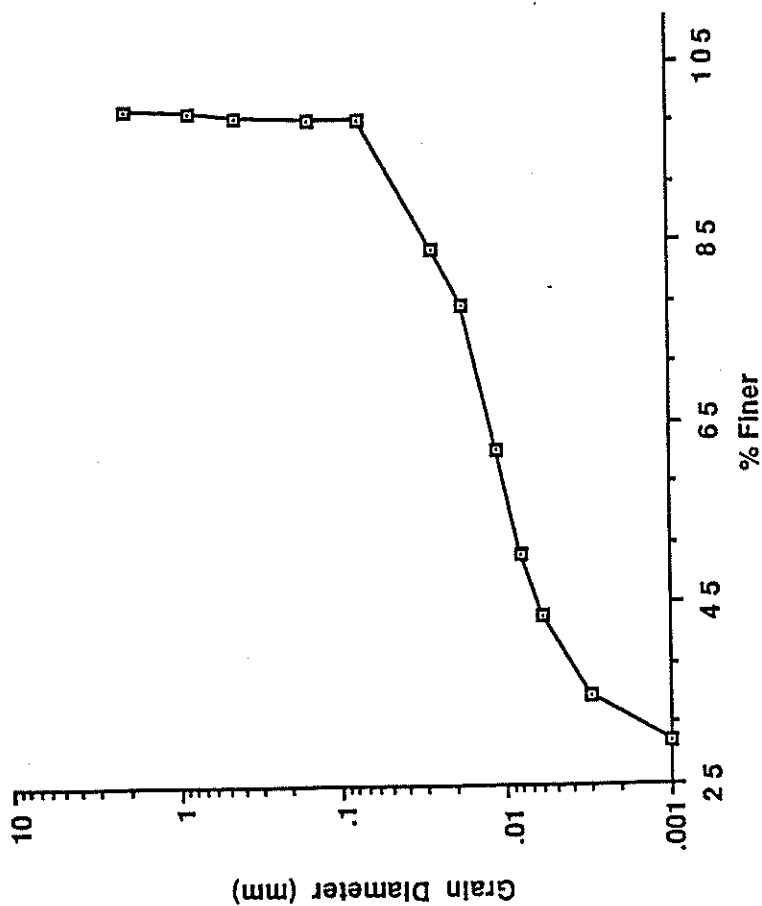


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 N1 W7  
Test Date: 1/31/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.6           |
| 0.420                      | 98.9           |
| 0.150                      | 98.7           |
| 0.075                      | 98.6           |
| 0.027                      | 84.2           |
| 0.018                      | 78.0           |
| 0.011                      | 62.1           |
| 0.008                      | 50.6           |
| 0.006                      | 43.7           |
| 0.003                      | 34.7           |
| 0.001                      | 29.7           |



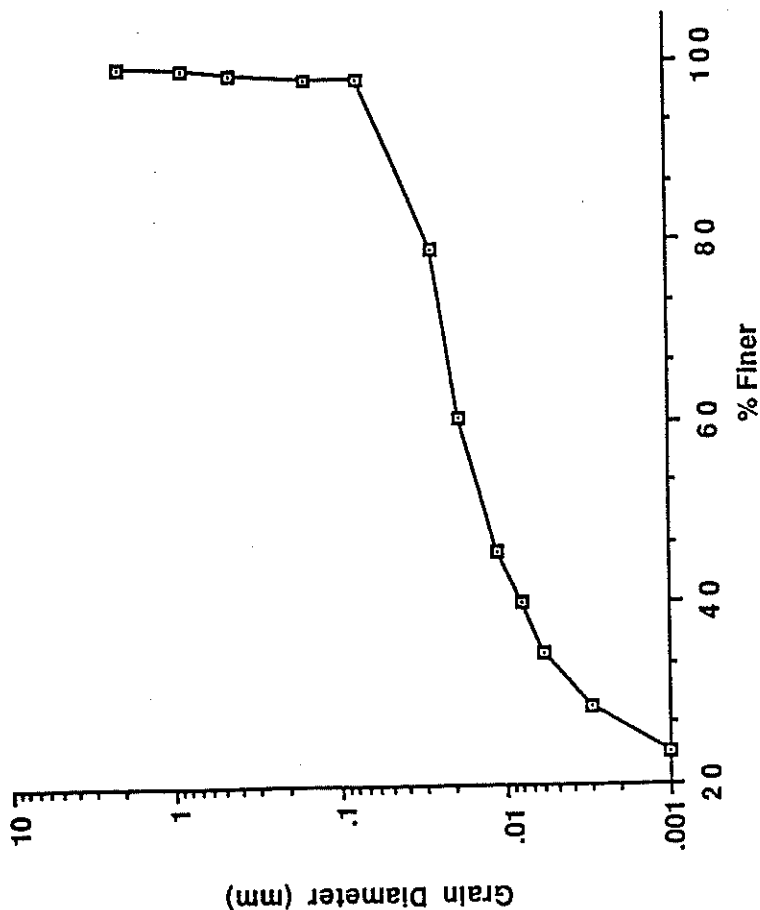


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 N1 W8  
Test Date: 1/18/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.5    |
| 0.420               | 98.8    |
| 0.150               | 98.3    |
| 0.075               | 98.2    |
| 0.027               | 79.2    |
| 0.019               | 60.7    |
| 0.011               | 45.8    |
| 0.008               | 40.2    |
| 0.006               | 34.5    |
| 0.003               | 28.6    |
| 0.001               | 23.7    |



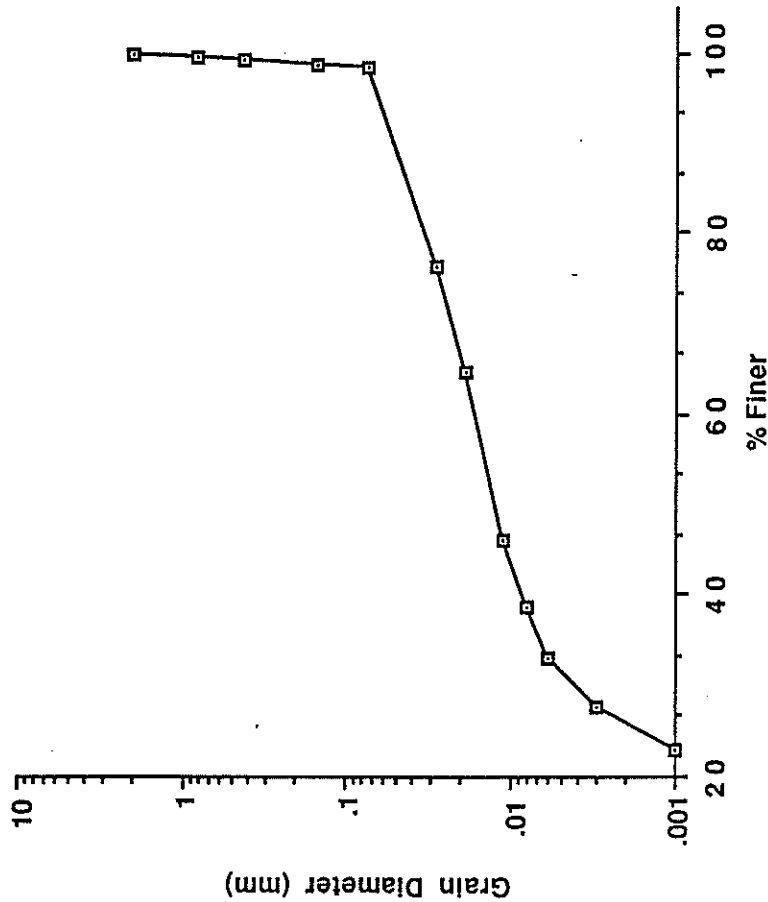


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 N1 W8  
Test Date: 1/25/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 99.7    |
| 0.420               | 99.4    |
| 0.150               | 98.7    |
| 0.075               | 98.6    |
| 0.028               | 76.4    |
| 0.019               | 64.6    |
| 0.011               | 46.1    |
| 0.008               | 38.8    |
| 0.006               | 32.9    |
| 0.003               | 27.8    |
| 0.001               | 22.9    |



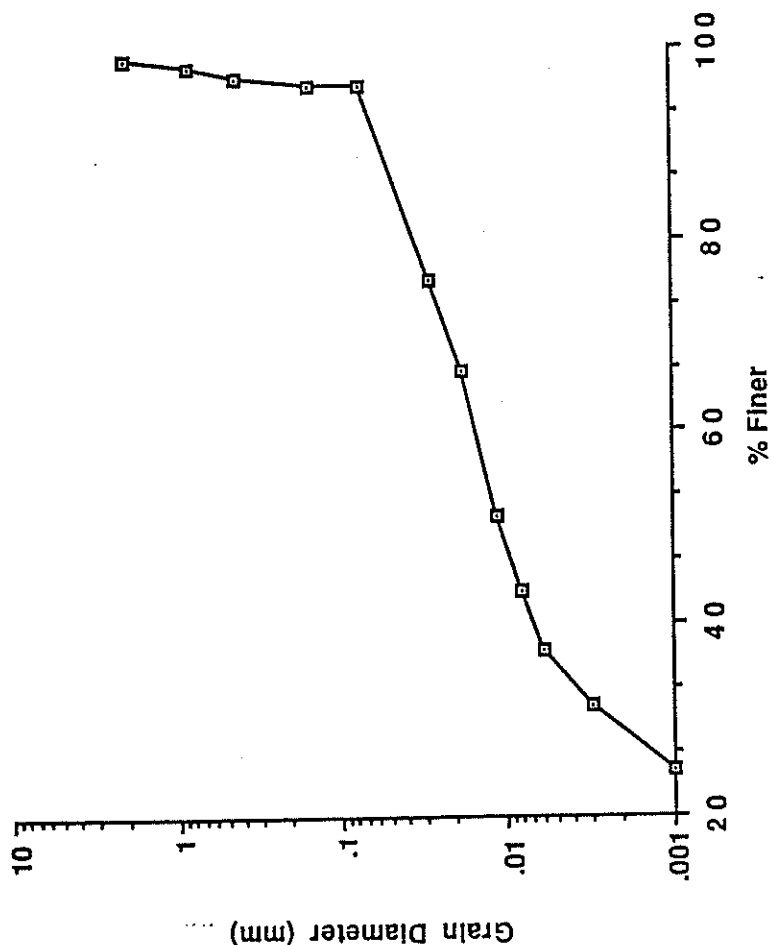


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W1  
Test Date: 1/18/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 98.8           |
| 0.840                      | 98.2           |
| 0.420                      | 96.9           |
| 0.150                      | 96.2           |
| 0.075                      | 96.1           |
| 0.028                      | 75.7           |
| 0.018                      | 66.4           |
| 0.011                      | 51.2           |
| 0.008                      | 43.3           |
| 0.006                      | 37.3           |
| 0.003                      | 31.5           |
| 0.001                      | 24.6           |



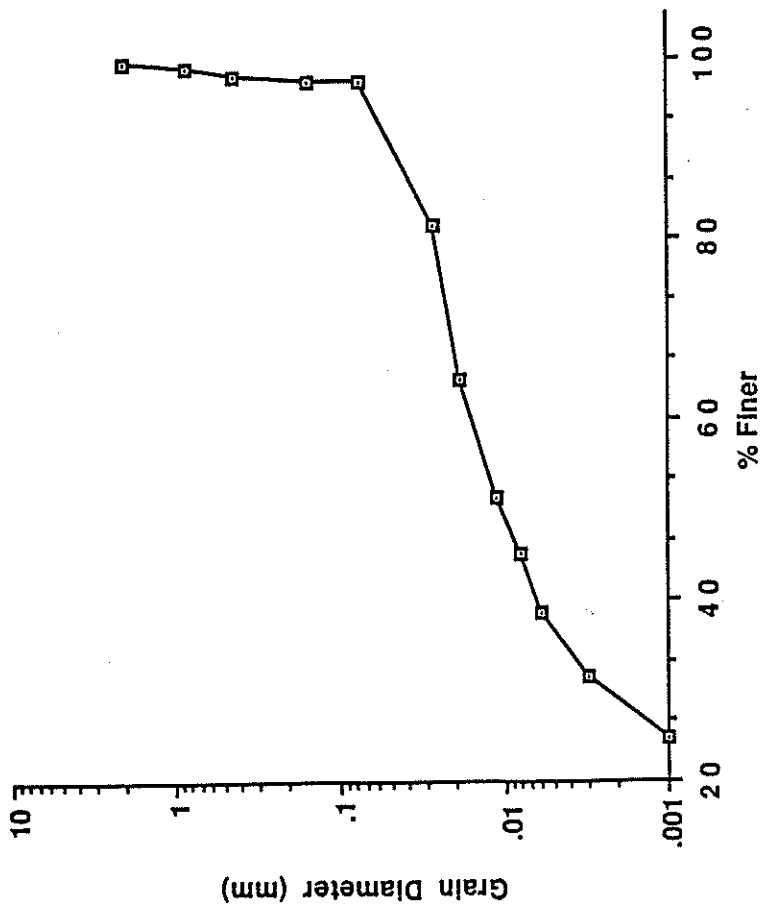


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W1  
Test Date: 1/24/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.6    |
| 0.840               | 99.0    |
| 0.420               | 98.1    |
| 0.150               | 97.6    |
| 0.075               | 97.5    |
| 0.027               | 81.7    |
| 0.019               | 64.4    |
| 0.011               | 51.3    |
| 0.008               | 45.2    |
| 0.006               | 38.8    |
| 0.003               | 31.5    |
| 0.001               | 24.8    |



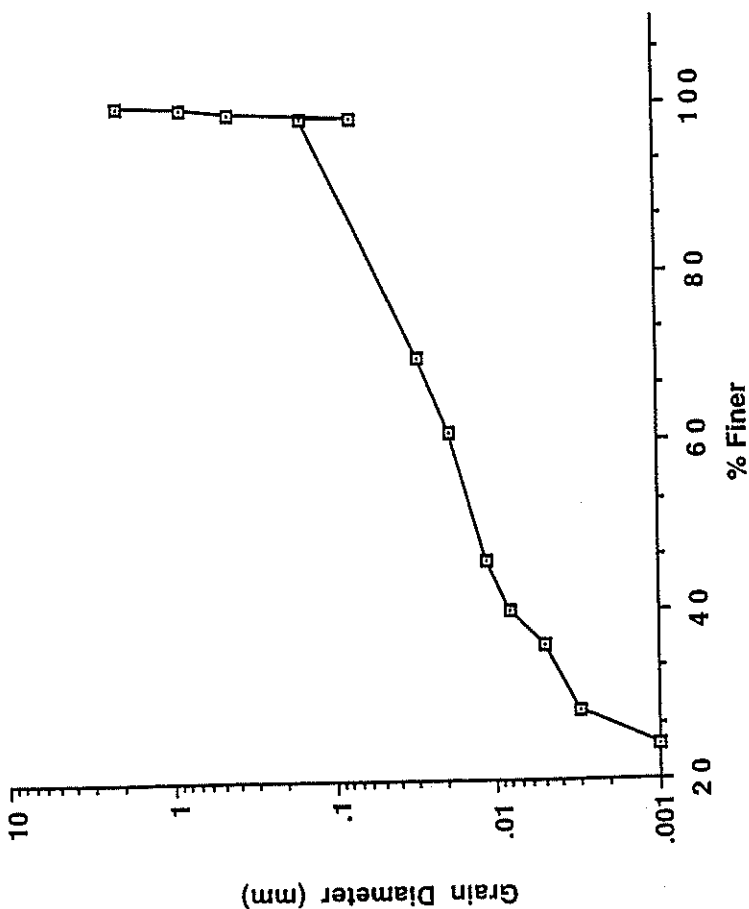


## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W2  
Test Date: 1/17/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.7           |
| 0.420                      | 98.9           |
| 0.150                      | 98.5           |
| 0.075                      | 98.5           |
| 0.029                      | 70.0           |
| 0.019                      | 61.0           |
| 0.011                      | 46.0           |
| 0.008                      | 40.0           |
| 0.006                      | 36.0           |
| 0.003                      | 28.0           |
| 0.001                      | 24.0           |



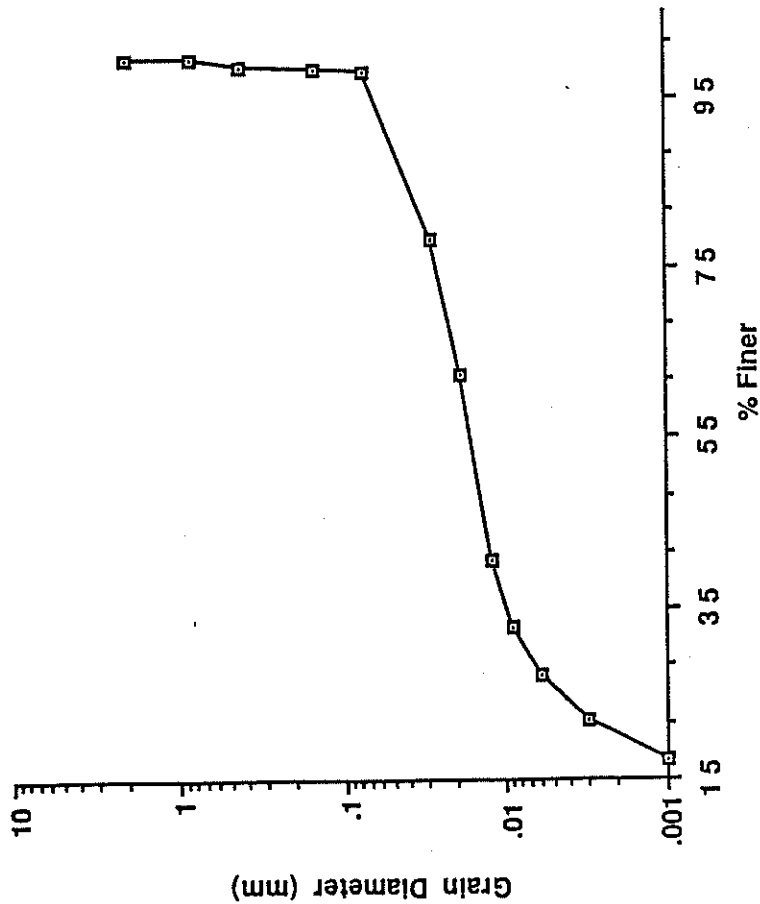


GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W2  
Test Date: 1/25/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.7           |
| 0.420                      | 98.8           |
| 0.150                      | 98.3           |
| 0.075                      | 98.2           |
| 0.028                      | 78.3           |
| 0.019                      | 62.3           |
| 0.012                      | 40.6           |
| 0.009                      | 32.9           |
| 0.006                      | 27.3           |
| 0.003                      | 21.8           |
| 0.001                      | 17.3           |



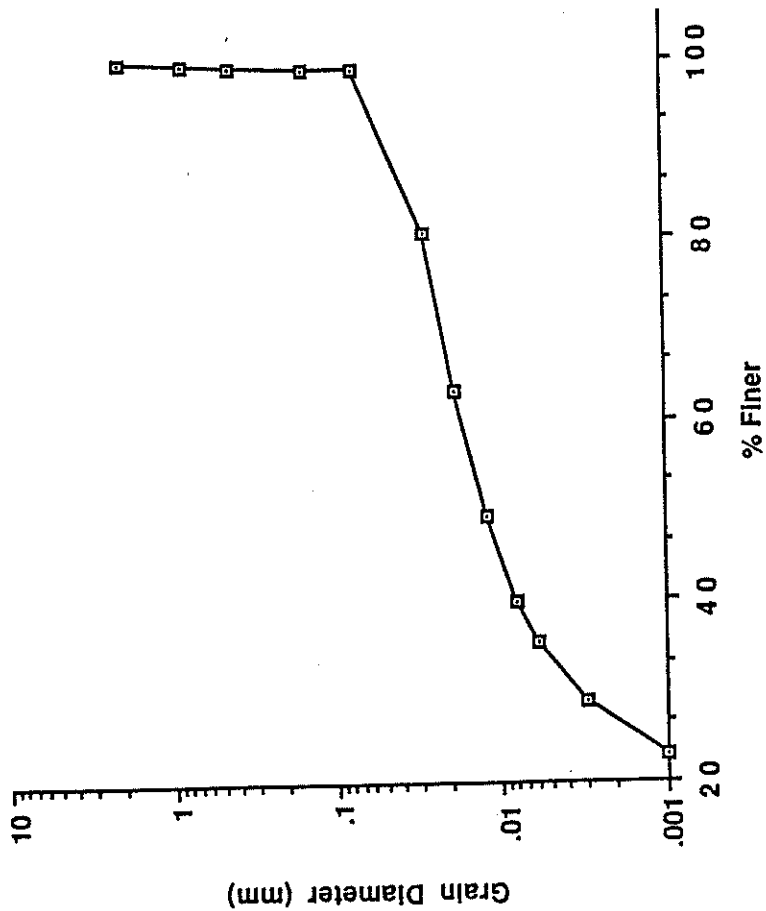


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W3  
Test Date: 1/24/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 99.8    |
| 0.420               | 99.3    |
| 0.150               | 99.1    |
| 0.075               | 99.0    |
| 0.028               | 80.8    |
| 0.019               | 63.1    |
| 0.012               | 49.4    |
| 0.008               | 39.9    |
| 0.006               | 35.5    |
| 0.003               | 28.9    |
| 0.001               | 22.9    |



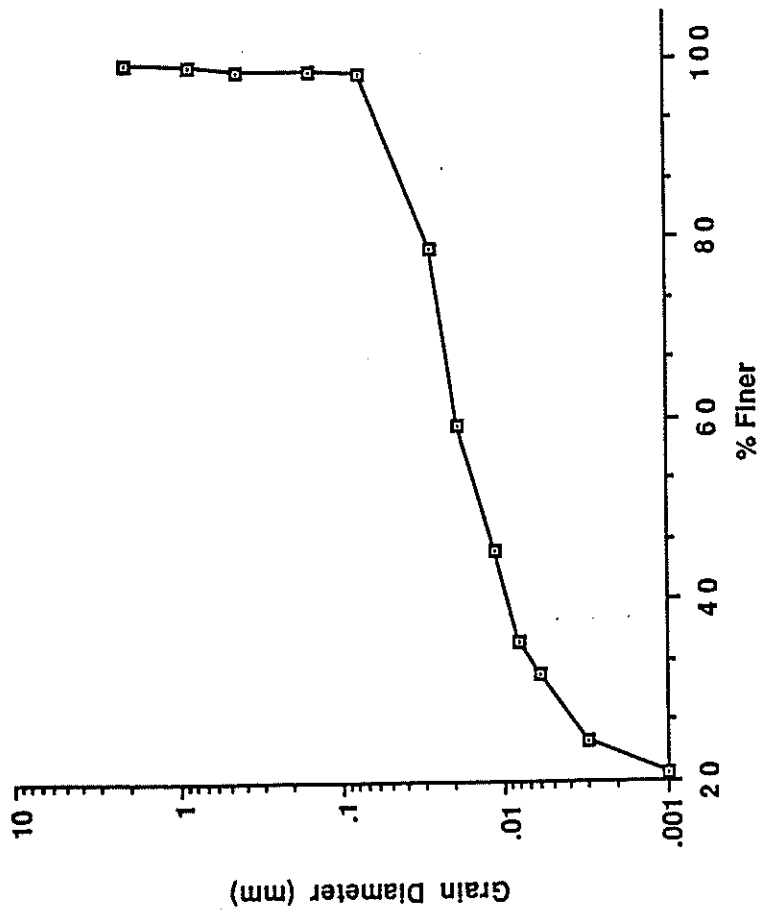


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W3  
Test Date: 1/19/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.4    |
| 0.420               | 98.8    |
| 0.150               | 98.7    |
| 0.075               | 98.6    |
| 0.027               | 78.9    |
| 0.019               | 59.3    |
| 0.011               | 45.5    |
| 0.008               | 35.5    |
| 0.006               | 31.9    |
| 0.003               | 24.5    |
| 0.001               | 20.9    |



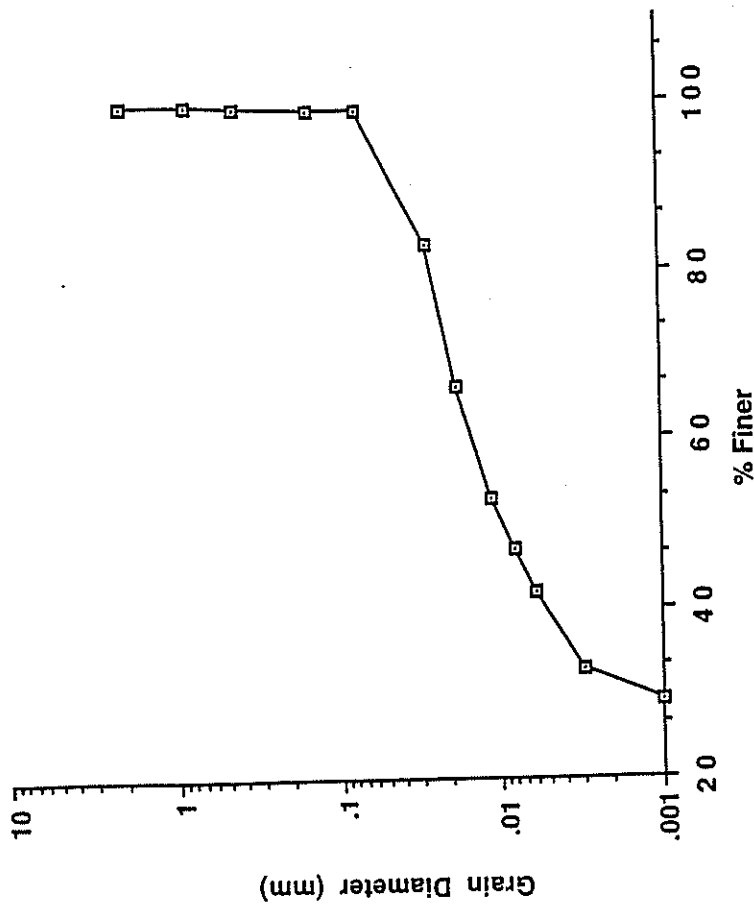


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W5  
Test Date: 1/16/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.6    |
| 0.420               | 99.2    |
| 0.150               | 99.0    |
| 0.075               | 98.8    |
| 0.027               | 83.0    |
| 0.018               | 66.0    |
| 0.011               | 53.0    |
| 0.008               | 47.0    |
| 0.006               | 42.0    |
| 0.003               | 33.0    |
| 0.001               | 29.0    |



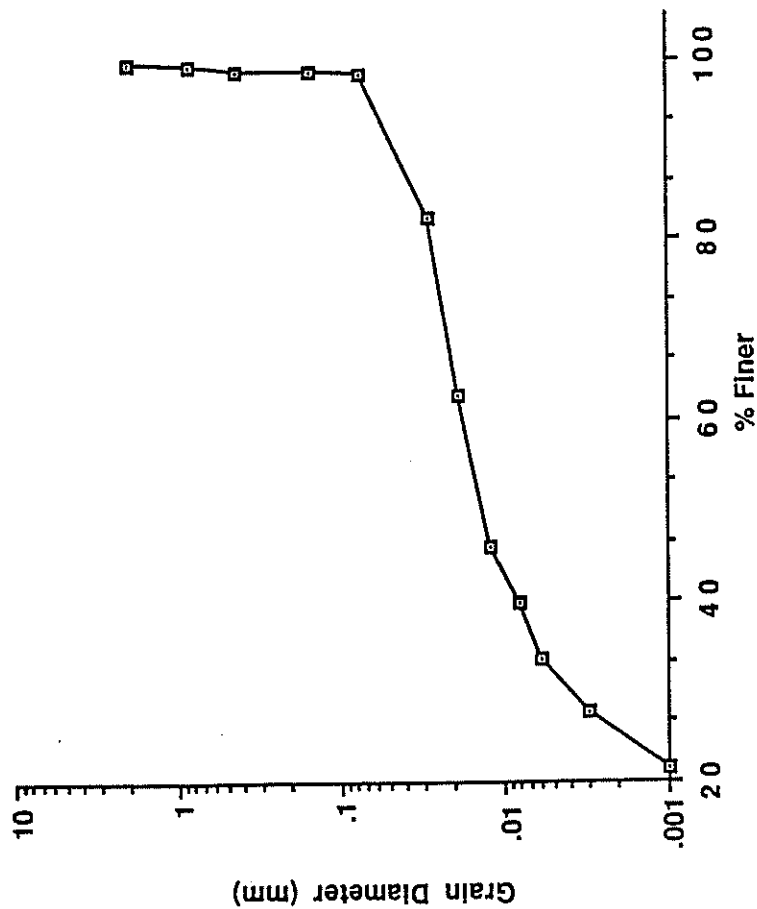


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W5  
Test Date: 1/24/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.7    |
| 0.840               | 99.3    |
| 0.420               | 98.9    |
| 0.150               | 98.7    |
| 0.075               | 98.6    |
| 0.028               | 82.6    |
| 0.019               | 62.5    |
| 0.012               | 46.2    |
| 0.008               | 39.7    |
| 0.006               | 33.5    |
| 0.003               | 27.7    |
| 0.001               | 21.4    |



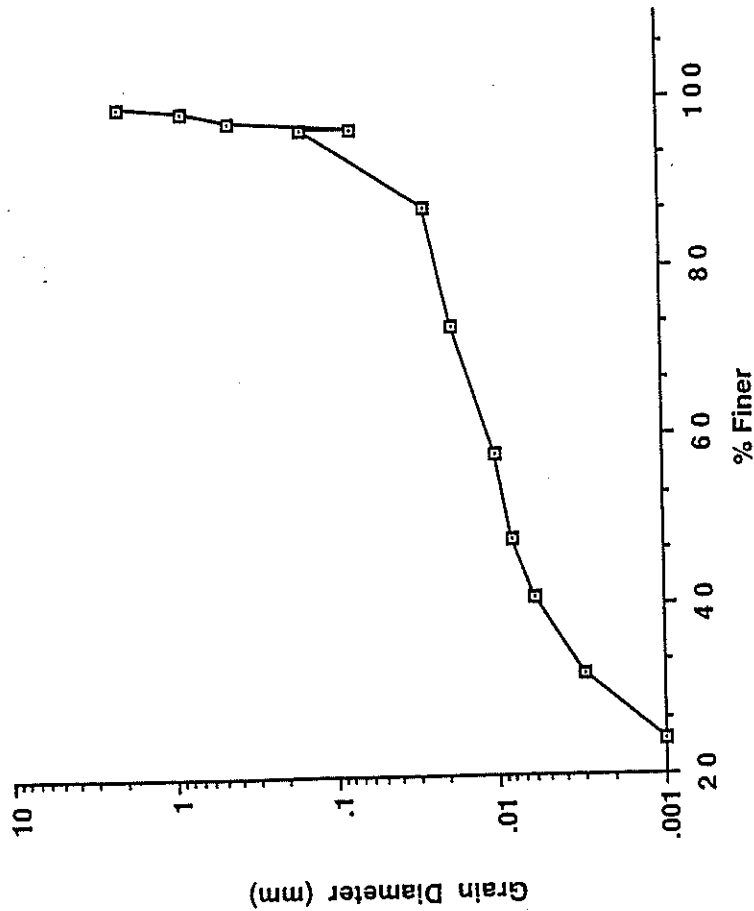


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W7  
Test Date: 1/16/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.3    |
| 0.840               | 98.8    |
| 0.420               | 97.3    |
| 0.150               | 96.3    |
| 0.075               | 96.3    |
| 0.026               | 87.0    |
| 0.018               | 73.0    |
| 0.011               | 58.0    |
| 0.008               | 48.0    |
| 0.006               | 41.0    |
| 0.003               | 32.0    |
| 0.001               | 24.0    |



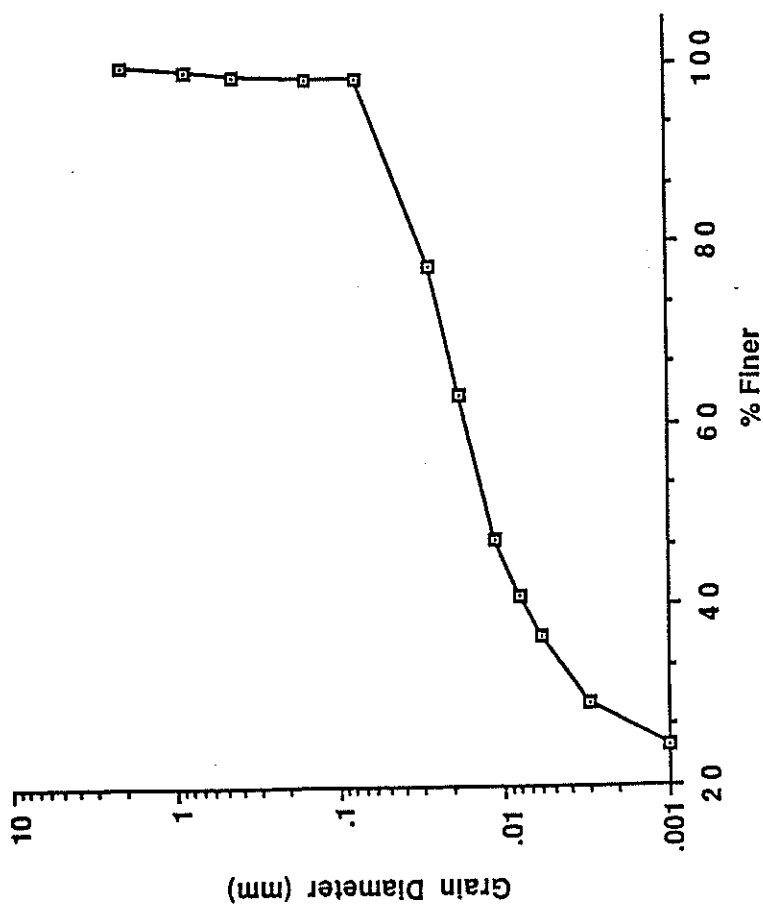


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W7  
Test Date: 1/19/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.5           |
| 0.420                      | 98.8           |
| 0.150                      | 98.6           |
| 0.075                      | 98.5           |
| 0.027                      | 77.5           |
| 0.018                      | 63.3           |
| 0.011                      | 47.2           |
| 0.008                      | 40.9           |
| 0.006                      | 36.7           |
| 0.003                      | 29.1           |
| 0.001                      | 24.3           |



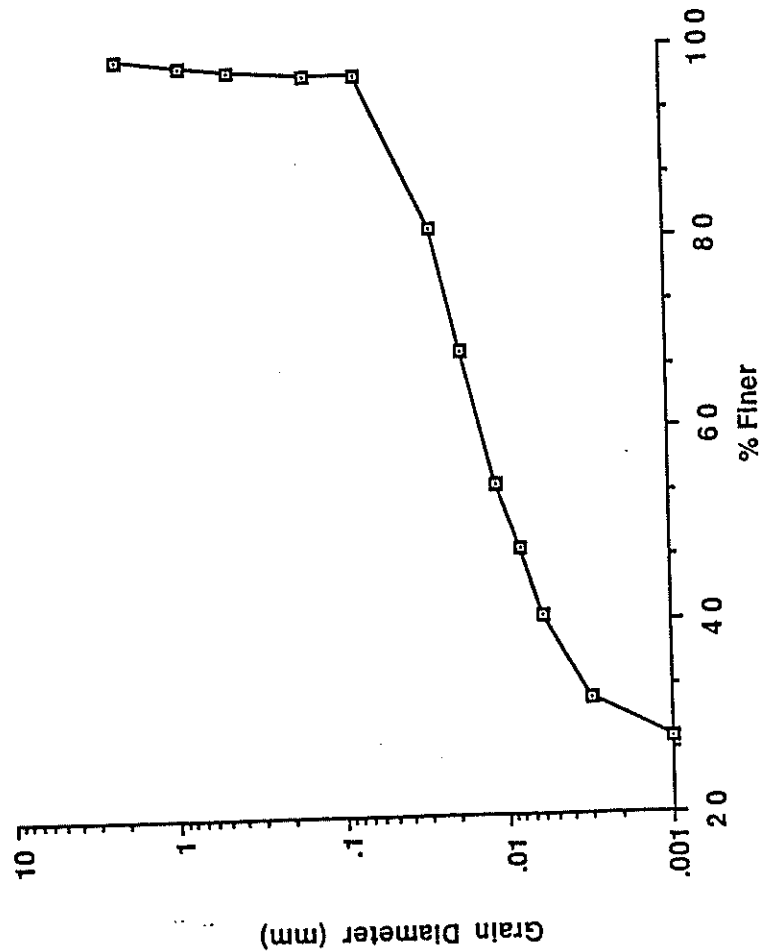


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W9  
Test Date: 2/1/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.2    |
| 0.840               | 98.2    |
| 0.420               | 97.7    |
| 0.150               | 97.3    |
| 0.075               | 97.1    |
| 0.027               | 81.0    |
| 0.018               | 68.3    |
| 0.011               | 54.4    |
| 0.008               | 47.5    |
| 0.006               | 40.6    |
| 0.003               | 32.0    |
| 0.001               | 27.8    |



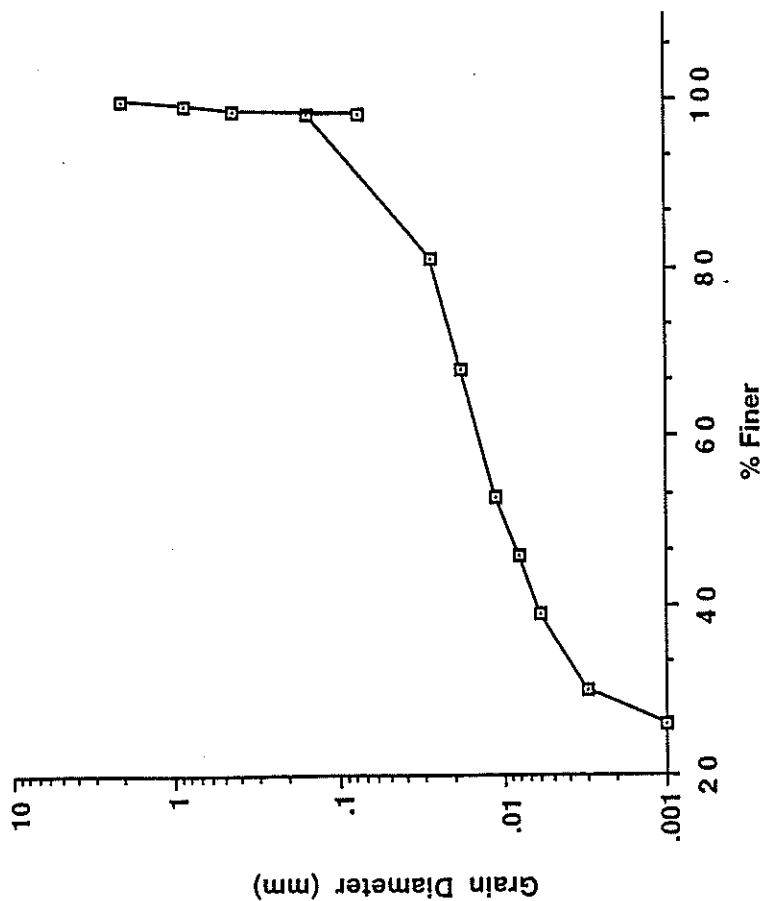


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W9  
Test Date: 1/16/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.3    |
| 0.420               | 98.6    |
| 0.150               | 98.3    |
| 0.075               | 98.3    |
| 0.027               | 81.0    |
| 0.018               | 68.0    |
| 0.011               | 53.0    |
| 0.008               | 46.0    |
| 0.006               | 39.0    |
| 0.003               | 30.0    |
| 0.001               | 26.0    |



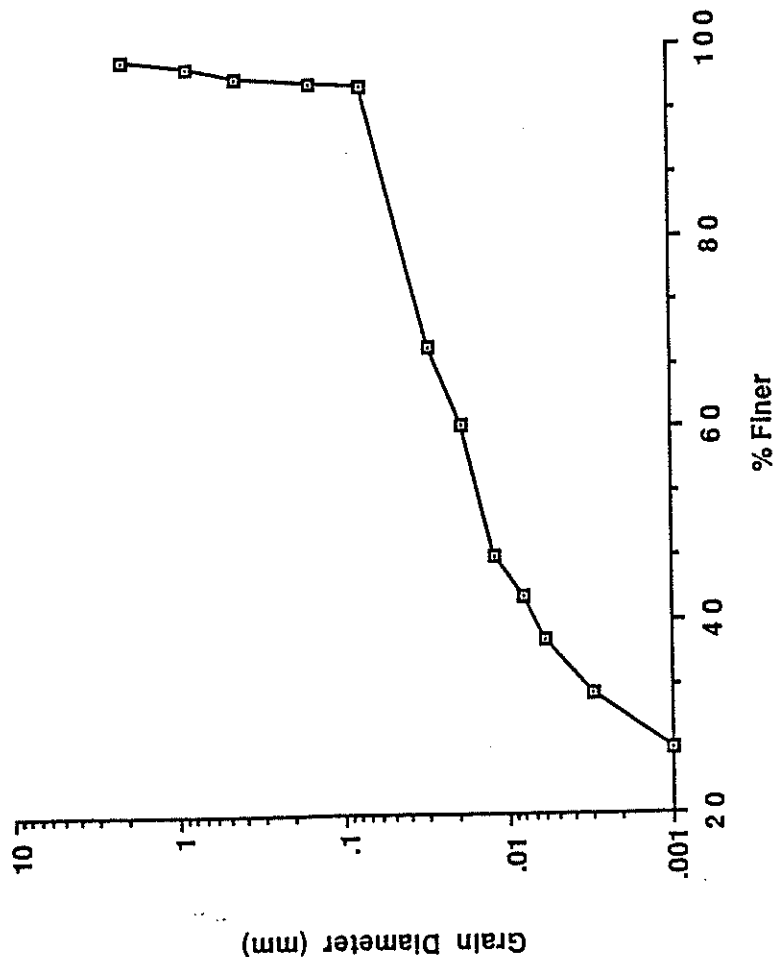


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W3  
Test Date: 2/2/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 98.6    |
| 0.840               | 97.6    |
| 0.420               | 96.7    |
| 0.150               | 96.0    |
| 0.075               | 95.9    |
| 0.029               | 68.5    |
| 0.019               | 60.4    |
| 0.012               | 46.7    |
| 0.008               | 42.6    |
| 0.006               | 38.2    |
| 0.003               | 32.5    |
| 0.001               | 26.7    |



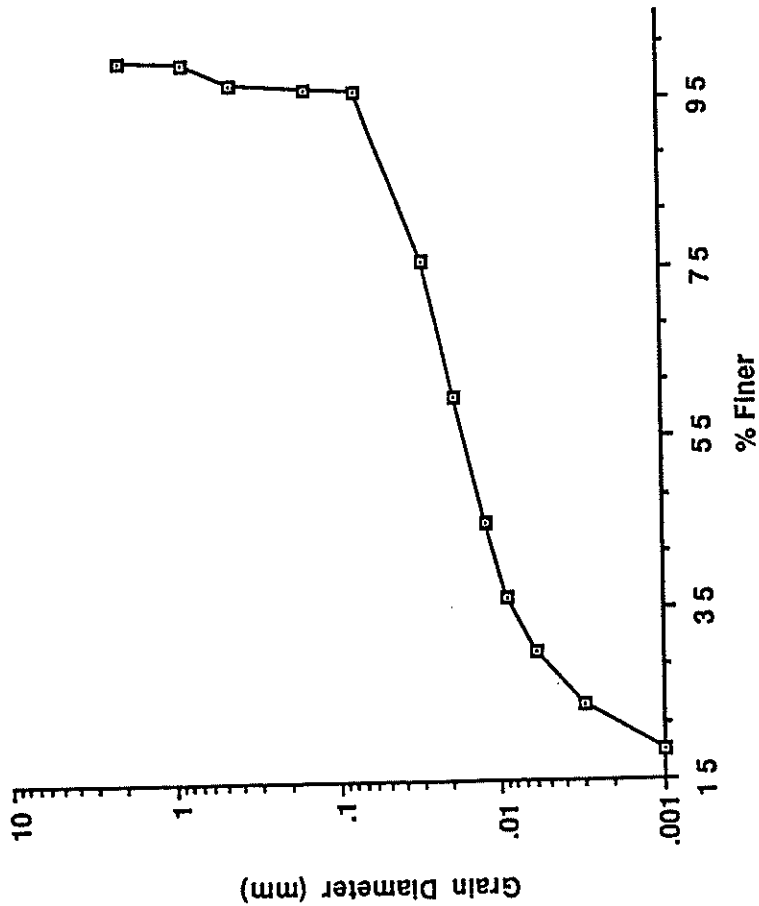


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W3  
Test Date: 1/23/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.3    |
| 0.420               | 96.8    |
| 0.150               | 96.1    |
| 0.075               | 96.0    |
| 0.029               | 75.7    |
| 0.019               | 59.8    |
| 0.012               | 45.1    |
| 0.009               | 36.4    |
| 0.006               | 30.2    |
| 0.003               | 23.8    |
| 0.001               | 18.3    |



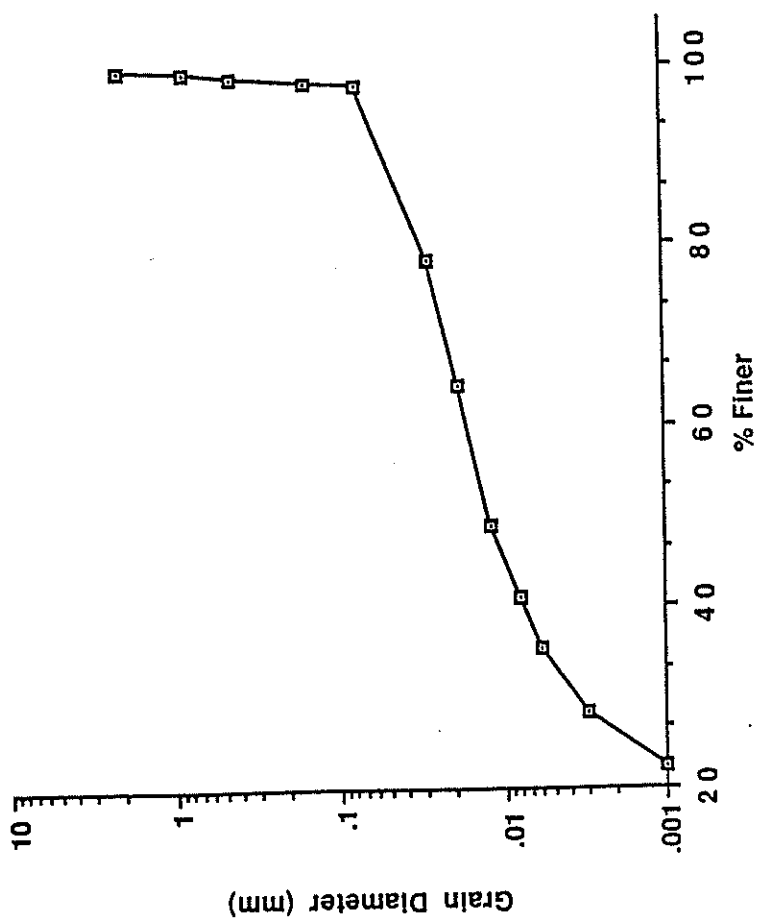


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W5  
Test Date: 1/30/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.4           |
| 0.420                      | 98.6           |
| 0.150                      | 98.1           |
| 0.075                      | 98.0           |
| 0.028                      | 78.4           |
| 0.019                      | 64.5           |
| 0.012                      | 49.0           |
| 0.008                      | 41.1           |
| 0.006                      | 35.3           |
| 0.003                      | 28.2           |
| 0.001                      | 22.4           |



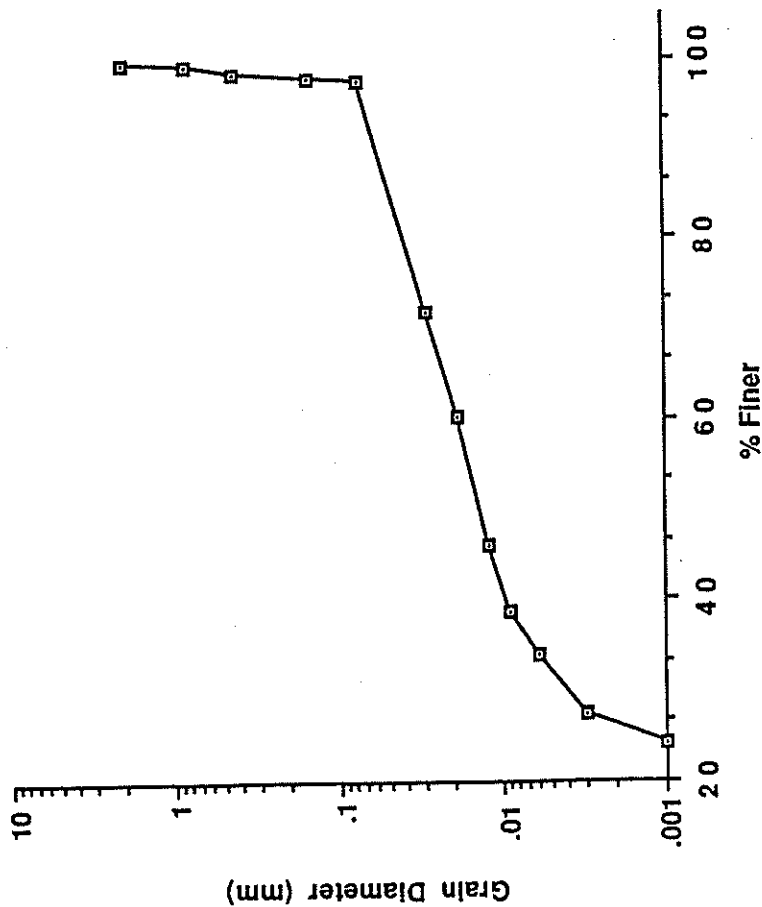


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W5  
Test Date: 1/31/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.7    |
| 0.840               | 99.4    |
| 0.420               | 98.4    |
| 0.150               | 97.8    |
| 0.075               | 97.7    |
| 0.029               | 71.8    |
| 0.019               | 60.2    |
| 0.012               | 46.1    |
| 0.009               | 38.8    |
| 0.006               | 33.9    |
| 0.003               | 27.4    |
| 0.001               | 24.2    |



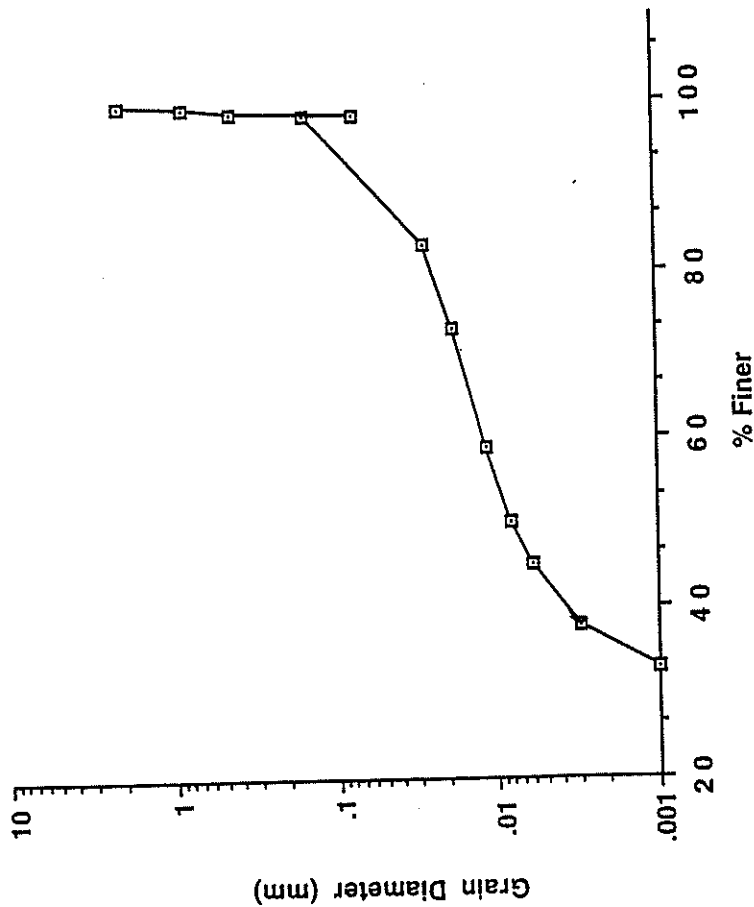


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W7  
Test Date: 1/17/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.3           |
| 0.420                      | 98.7           |
| 0.150                      | 98.4           |
| 0.075                      | 98.4           |
| 0.027                      | 83.0           |
| 0.018                      | 73.0           |
| 0.011                      | 59.0           |
| 0.008                      | 50.0           |
| 0.006                      | 45.0           |
| 0.003                      | 38.0           |
| 0.001                      | 33.0           |



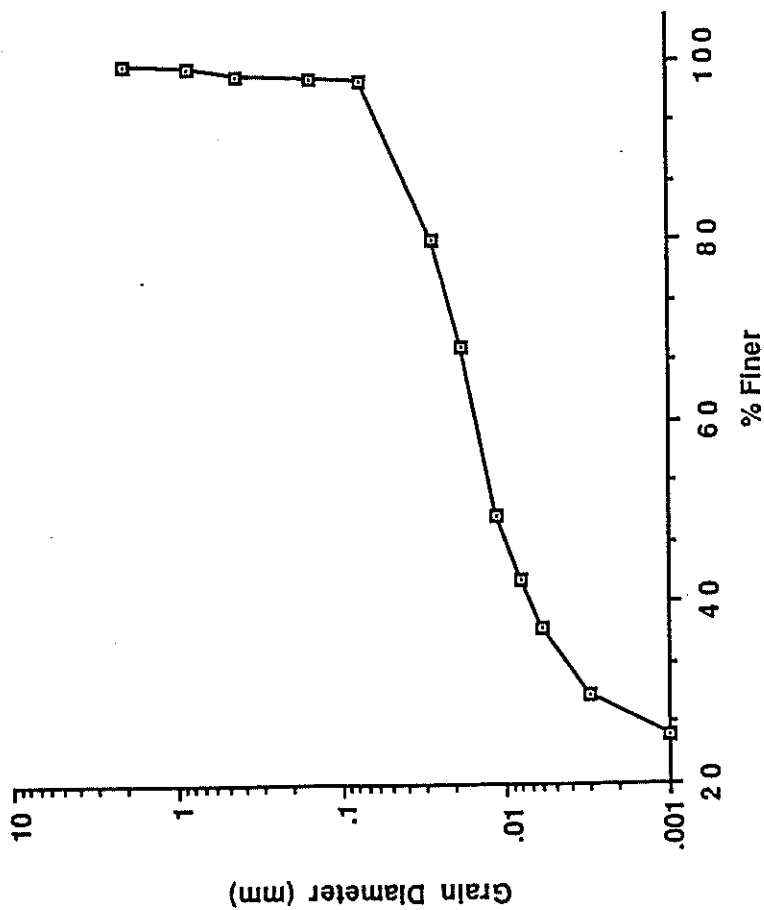


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W7  
Test Date: 2/1/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.3           |
| 0.420                      | 98.6           |
| 0.150                      | 98.2           |
| 0.075                      | 98.0           |
| 0.027                      | 80.1           |
| 0.018                      | 68.2           |
| 0.011                      | 49.6           |
| 0.008                      | 42.4           |
| 0.006                      | 37.3           |
| 0.003                      | 29.9           |
| 0.001                      | 25.2           |



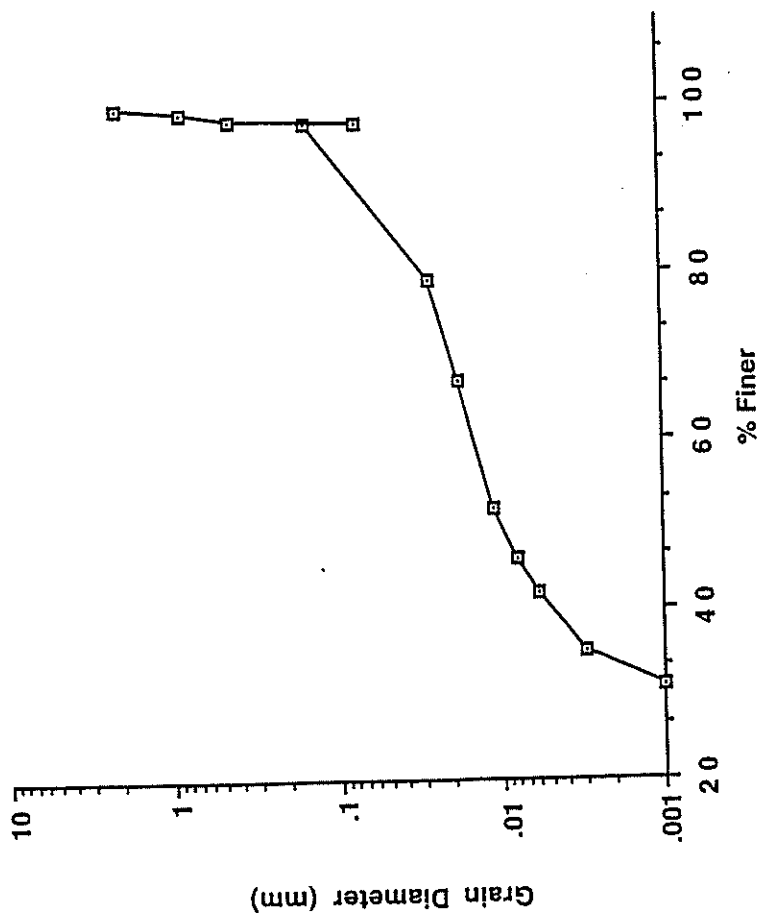


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W9  
Test Date: 1/13/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.6           |
| 0.840                      | 99.1           |
| 0.420                      | 98.1           |
| 0.150                      | 97.6           |
| 0.075                      | 97.6           |
| 0.027                      | 79.0           |
| 0.018                      | 67.0           |
| 0.011                      | 52.0           |
| 0.008                      | 46.0           |
| 0.006                      | 42.0           |
| 0.003                      | 35.0           |
| 0.001                      | 31.0           |



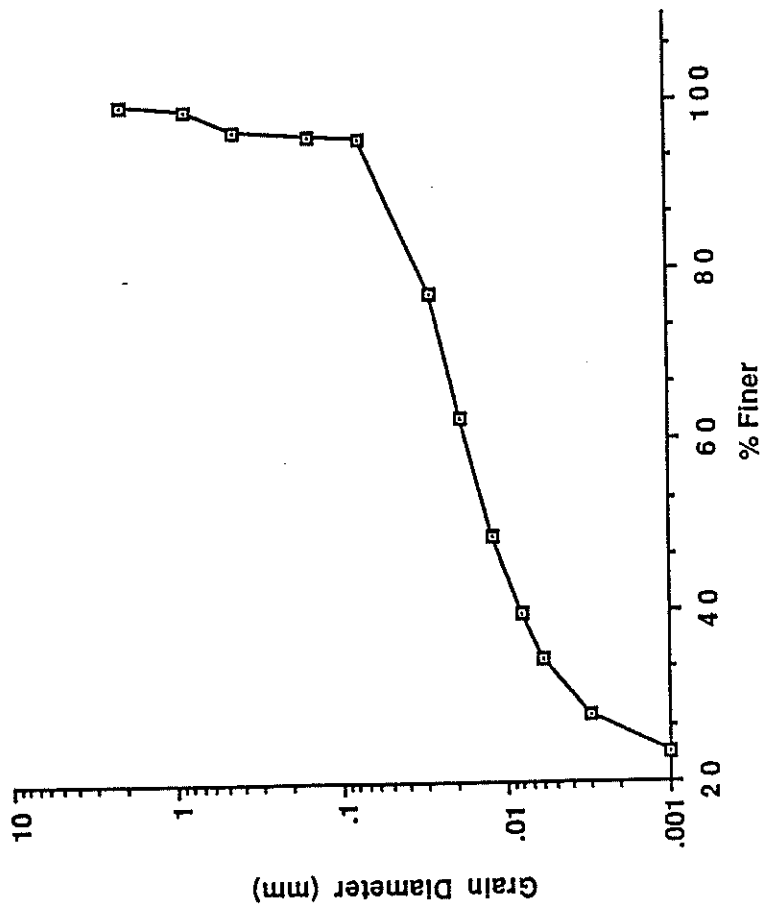


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W9  
Test Date: 1/30/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 98.9           |
| 0.420                      | 96.5           |
| 0.150                      | 95.8           |
| 0.075                      | 95.7           |
| 0.028                      | 77.2           |
| 0.019                      | 62.7           |
| 0.012                      | 48.8           |
| 0.008                      | 39.9           |
| 0.006                      | 34.5           |
| 0.003                      | 27.9           |
| 0.001                      | 23.4           |



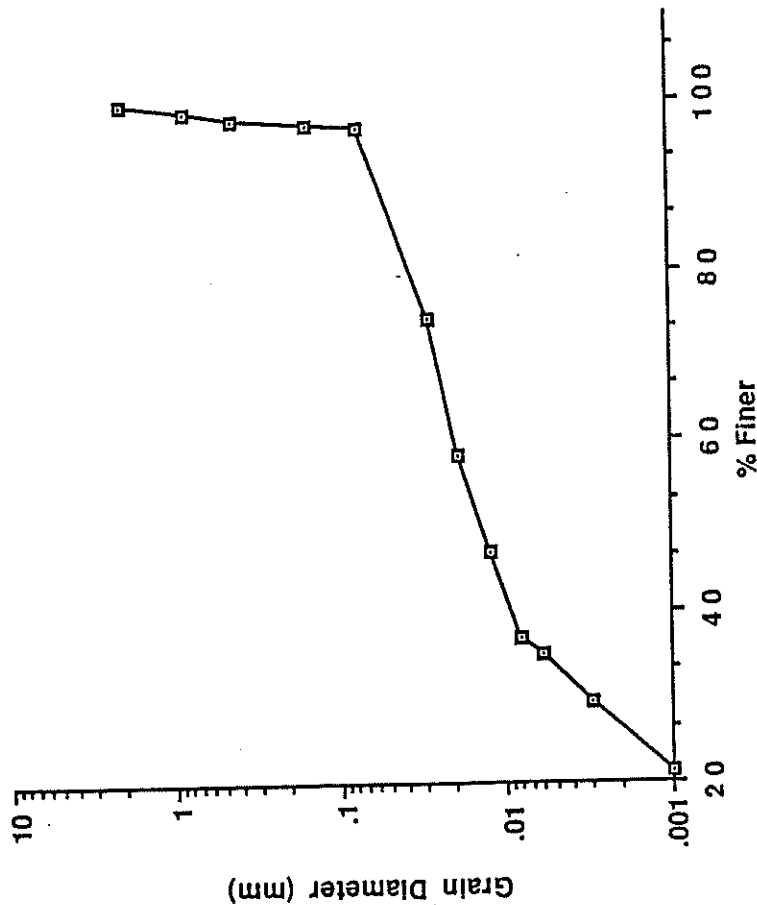


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W11  
Test Date: 2/2/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.5    |
| 0.840               | 98.7    |
| 0.420               | 97.7    |
| 0.150               | 97.0    |
| 0.075               | 96.9    |
| 0.028               | 74.1    |
| 0.019               | 58.4    |
| 0.012               | 47.1    |
| 0.008               | 36.8    |
| 0.006               | 35.1    |
| 0.003               | 29.5    |
| 0.001               | 21.3    |



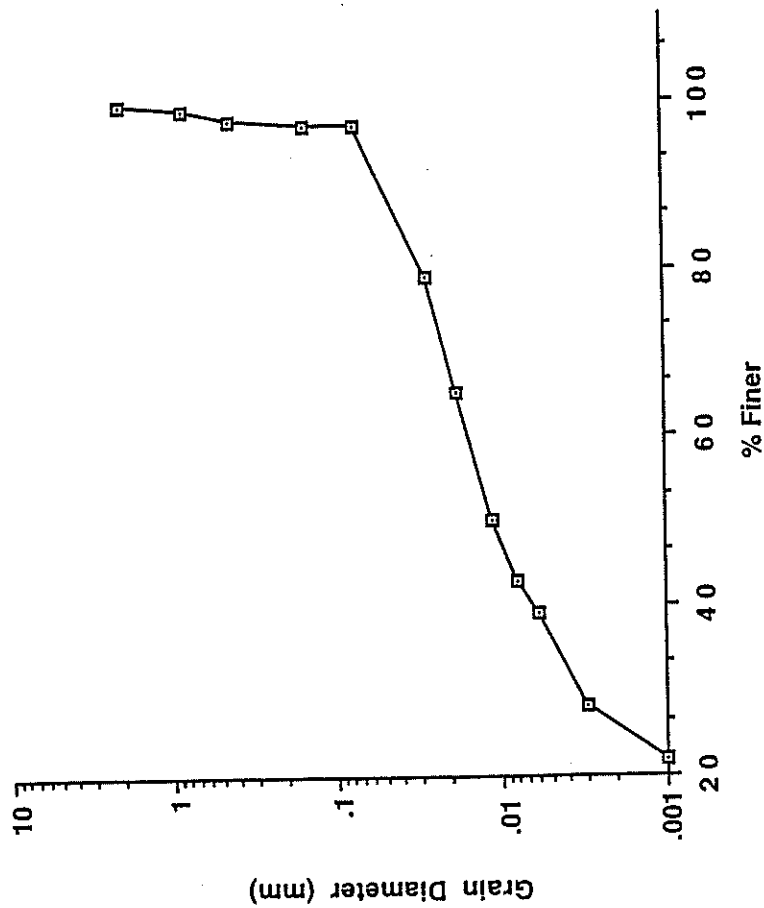


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W11  
Test Date: 1/17/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.6           |
| 0.840                      | 99.0           |
| 0.420                      | 97.9           |
| 0.150                      | 97.0           |
| 0.075                      | 97.0           |
| 0.027                      | 79.0           |
| 0.018                      | 65.0           |
| 0.011                      | 50.0           |
| 0.008                      | 43.0           |
| 0.006                      | 39.0           |
| 0.003                      | 28.0           |
| 0.001                      | 22.0           |



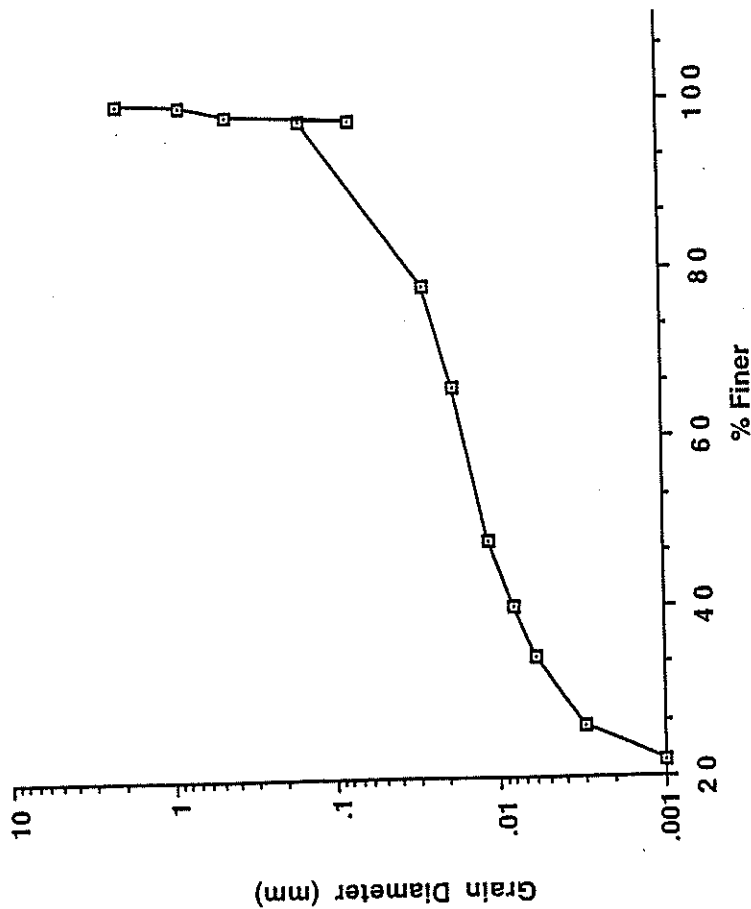


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W3  
Test Date: 1/17/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.7           |
| 0.420                      | 98.5           |
| 0.150                      | 97.8           |
| 0.075                      | 97.8           |
| 0.027                      | 78.0           |
| 0.018                      | 66.0           |
| 0.011                      | 48.0           |
| 0.008                      | 40.0           |
| 0.006                      | 34.0           |
| 0.003                      | 26.0           |
| 0.001                      | 22.0           |



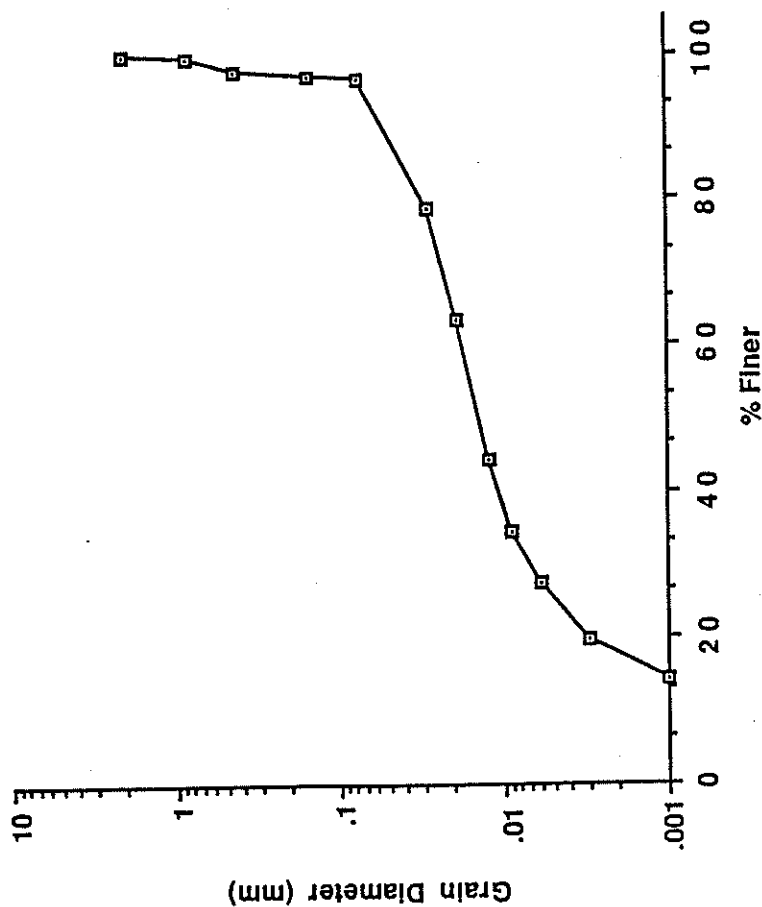


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W3  
Test Date: 1/23/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.6           |
| 0.420                      | 97.7           |
| 0.150                      | 96.8           |
| 0.075                      | 96.7           |
| 0.028                      | 78.5           |
| 0.019                      | 63.4           |
| 0.012                      | 44.1           |
| 0.009                      | 34.5           |
| 0.006                      | 27.6           |
| 0.003                      | 19.8           |
| 0.001                      | 14.1           |



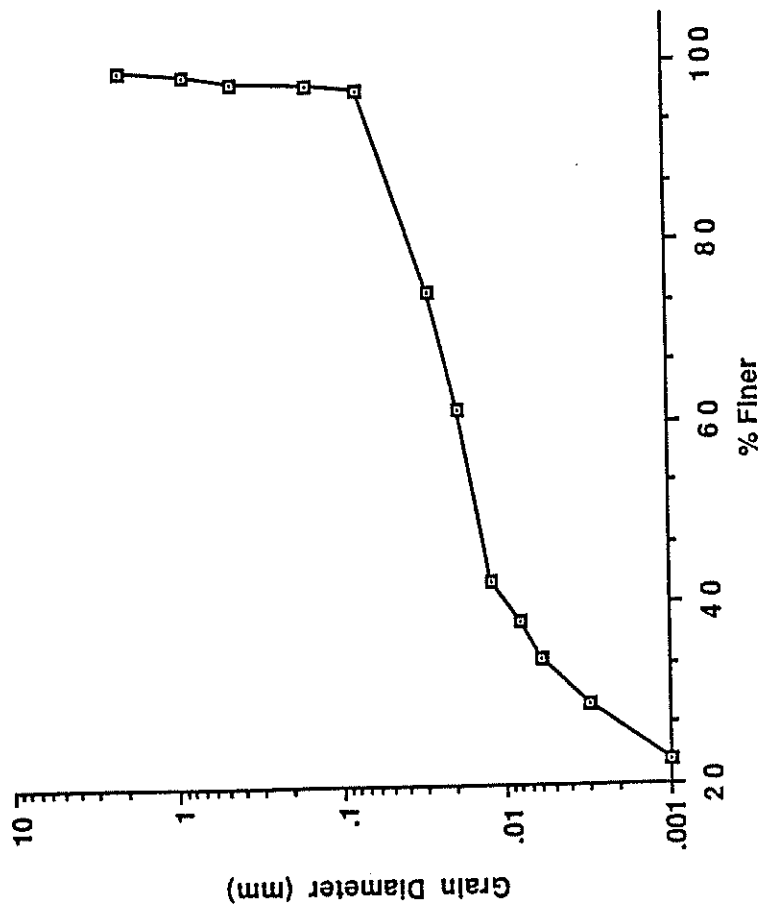


## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W5  
Test Date: 2/1/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.5           |
| 0.840                      | 98.7           |
| 0.420                      | 97.9           |
| 0.150                      | 97.6           |
| 0.075                      | 97.0           |
| 0.028                      | 74.5           |
| 0.019                      | 61.4           |
| 0.012                      | 42.4           |
| 0.008                      | 38.2           |
| 0.006                      | 34.0           |
| 0.003                      | 28.9           |
| 0.001                      | 22.7           |



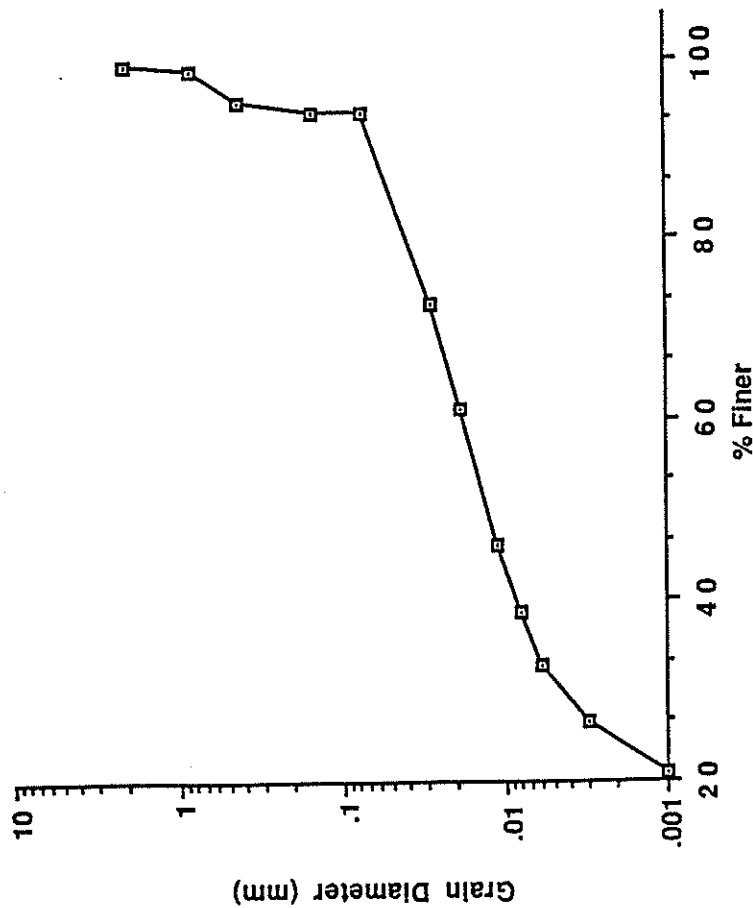


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W5  
Test Date: 1/19/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.4           |
| 0.840                      | 98.7           |
| 0.420                      | 95.3           |
| 0.150                      | 94.1           |
| 0.075                      | 93.9           |
| 0.028                      | 72.8           |
| 0.019                      | 61.1           |
| 0.011                      | 46.1           |
| 0.008                      | 38.6           |
| 0.006                      | 32.8           |
| 0.003                      | 26.6           |
| 0.001                      | 20.8           |



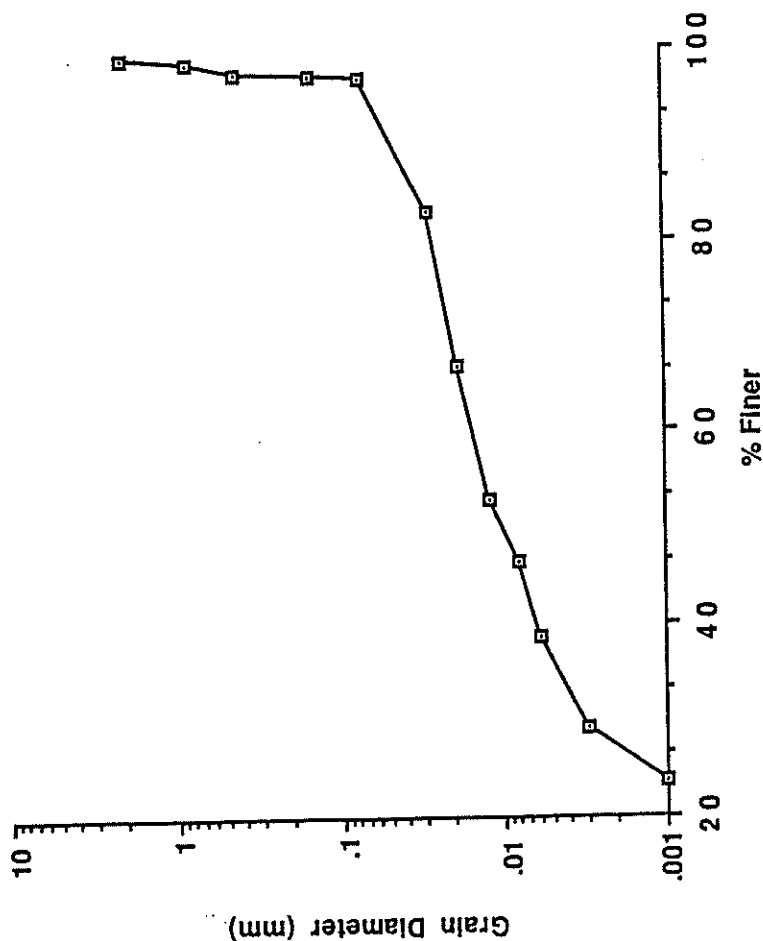


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W7  
Test Date: 1/24/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.2    |
| 0.840               | 98.5    |
| 0.420               | 97.5    |
| 0.150               | 97.1    |
| 0.075               | 97.0    |
| 0.028               | 82.9    |
| 0.019               | 66.9    |
| 0.012               | 53.0    |
| 0.008               | 46.6    |
| 0.006               | 38.7    |
| 0.003               | 29.3    |
| 0.001               | 23.7    |



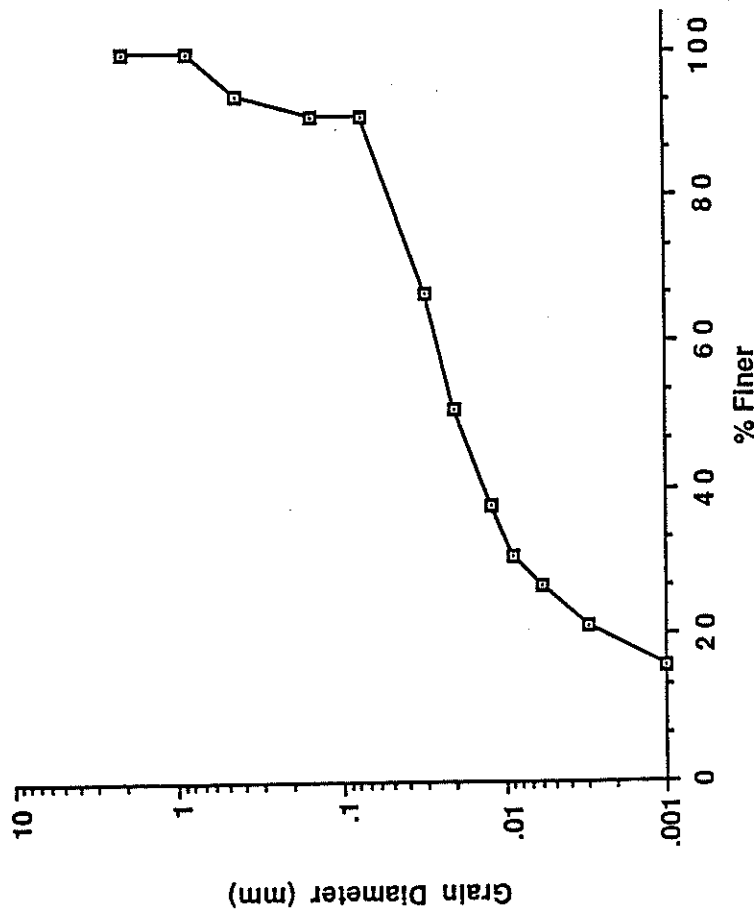


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W7  
Test Date: 1/25/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 99.7    |
| 0.420               | 94.0    |
| 0.150               | 91.3    |
| 0.075               | 91.2    |
| 0.030               | 66.6    |
| 0.020               | 50.9    |
| 0.012               | 37.7    |
| 0.009               | 30.9    |
| 0.006               | 26.6    |
| 0.003               | 21.4    |
| 0.001               | 15.9    |



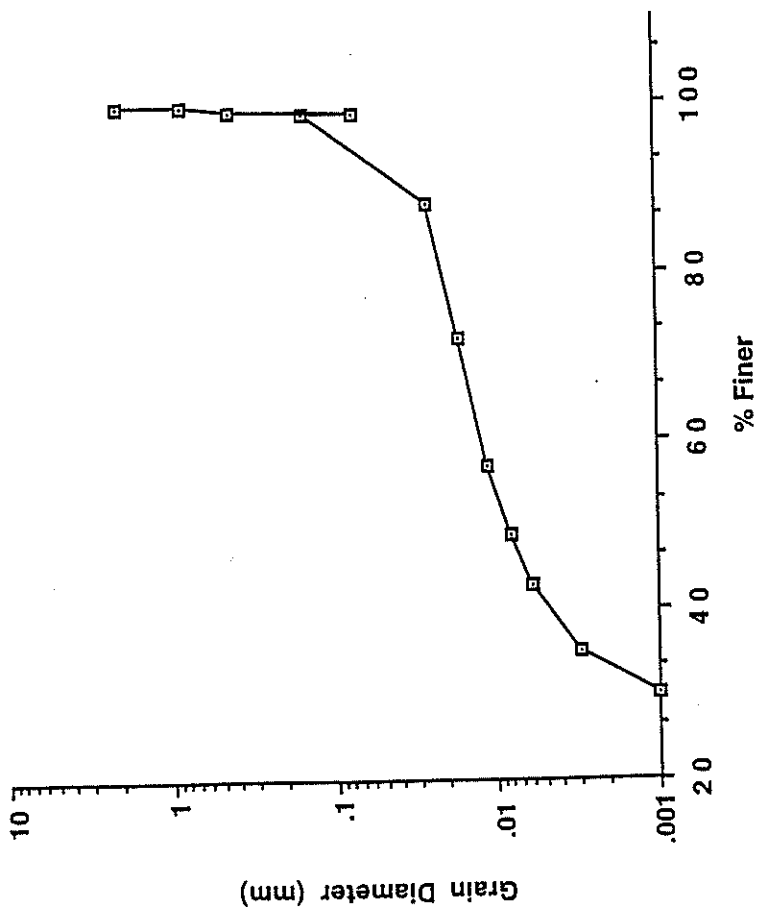


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W9  
Test Date: 1/13/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.7    |
| 0.840               | 99.6    |
| 0.420               | 98.9    |
| 0.150               | 98.6    |
| 0.075               | 98.6    |
| 0.026               | 88.0    |
| 0.017               | 72.0    |
| 0.011               | 57.0    |
| 0.008               | 49.0    |
| 0.006               | 43.0    |
| 0.003               | 35.0    |
| 0.001               | 30.0    |



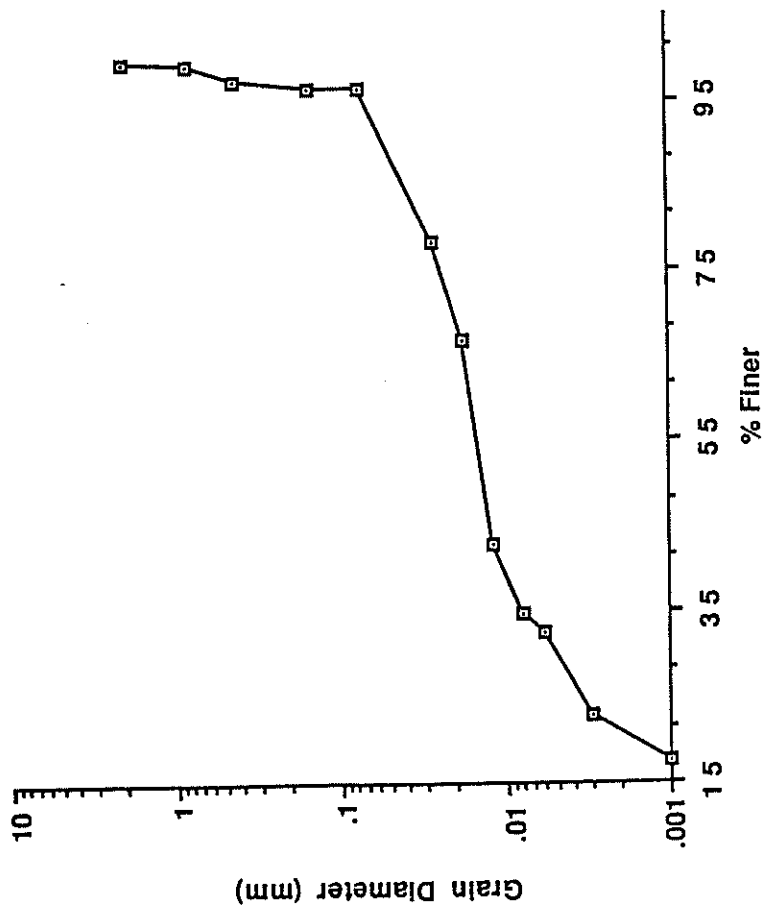


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W9  
Test Date: 1/19/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.5    |
| 0.420               | 97.6    |
| 0.150               | 96.5    |
| 0.075               | 96.4    |
| 0.027               | 78.4    |
| 0.018               | 66.7    |
| 0.012               | 42.9    |
| 0.008               | 34.9    |
| 0.006               | 32.7    |
| 0.003               | 22.8    |
| 0.001               | 17.5    |



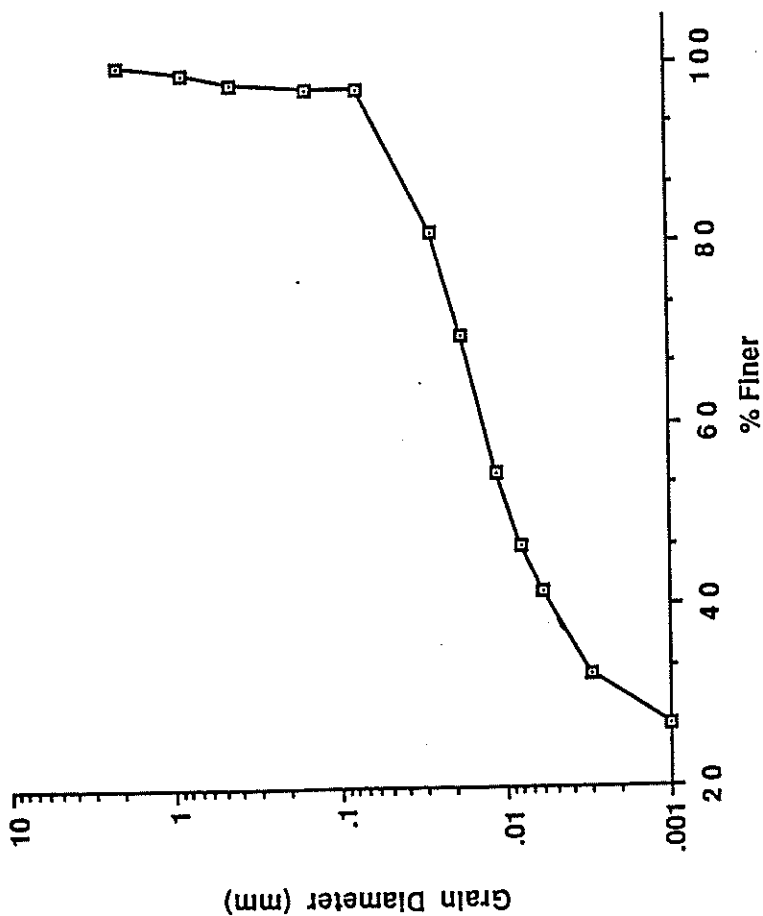


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W11  
Test Date: 1/13/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.2           |
| 0.420                      | 97.9           |
| 0.150                      | 97.4           |
| 0.075                      | 97.3           |
| 0.027                      | 81.2           |
| 0.018                      | 69.9           |
| 0.011                      | 54.6           |
| 0.008                      | 46.8           |
| 0.006                      | 41.6           |
| 0.003                      | 32.5           |
| 0.001                      | 26.9           |



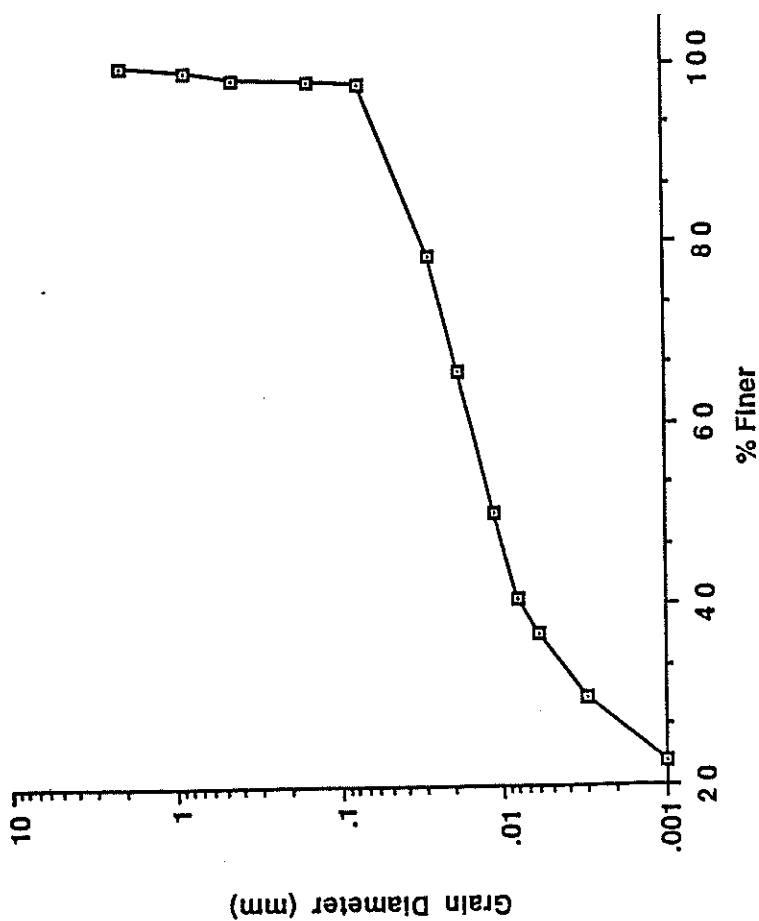


## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W11  
Test Date: 1/23/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.4           |
| 0.420                      | 98.6           |
| 0.150                      | 98.1           |
| 0.075                      | 98.0           |
| 0.028                      | 78.6           |
| 0.019                      | 66.0           |
| 0.011                      | 50.3           |
| 0.008                      | 40.8           |
| 0.006                      | 36.8           |
| 0.003                      | 29.8           |
| 0.001                      | 22.8           |



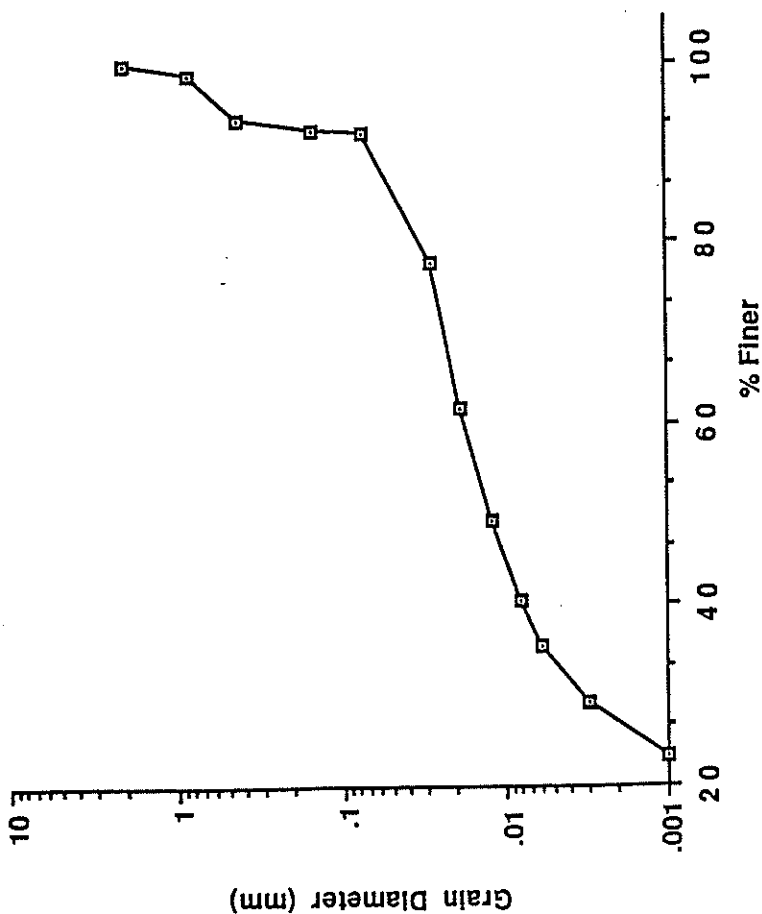


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S6 W5  
Test Date: 1/18/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 98.9    |
| 0.420               | 93.7    |
| 0.150               | 92.5    |
| 0.075               | 92.4    |
| 0.028               | 77.7    |
| 0.019               | 61.9    |
| 0.012               | 49.2    |
| 0.008               | 40.4    |
| 0.006               | 35.3    |
| 0.003               | 29.1    |
| 0.001               | 23.2    |



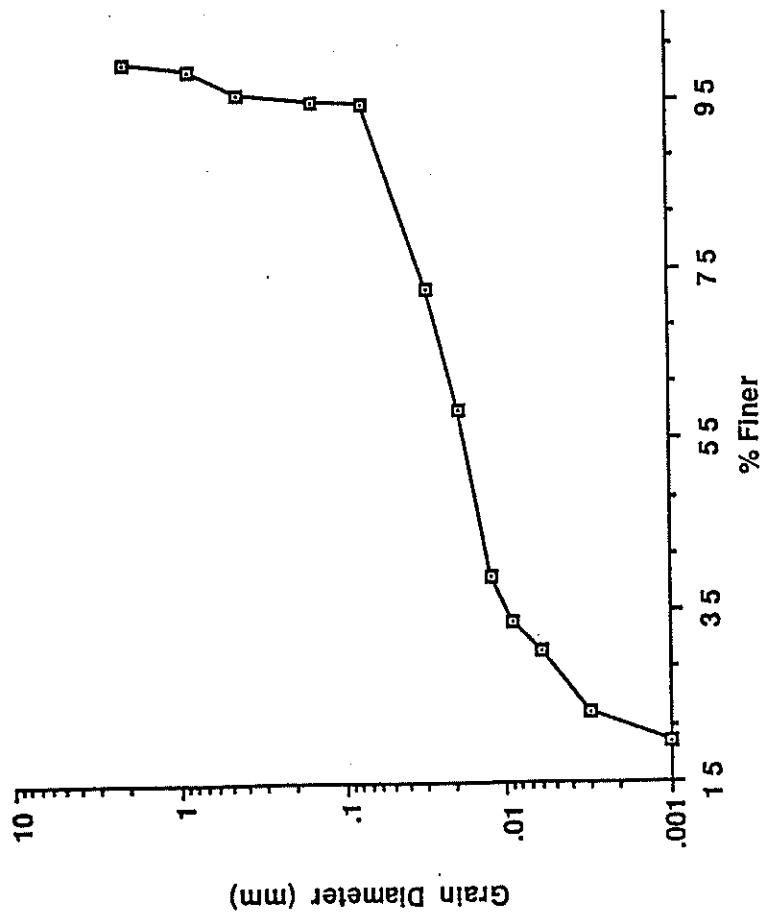


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S6 W5  
Test Date: 1/30/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.6    |
| 0.840               | 98.7    |
| 0.420               | 95.8    |
| 0.150               | 94.9    |
| 0.075               | 94.8    |
| 0.029               | 72.7    |
| 0.019               | 58.7    |
| 0.012               | 39.1    |
| 0.009               | 33.9    |
| 0.006               | 30.3    |
| 0.003               | 23.1    |
| 0.001               | 19.7    |



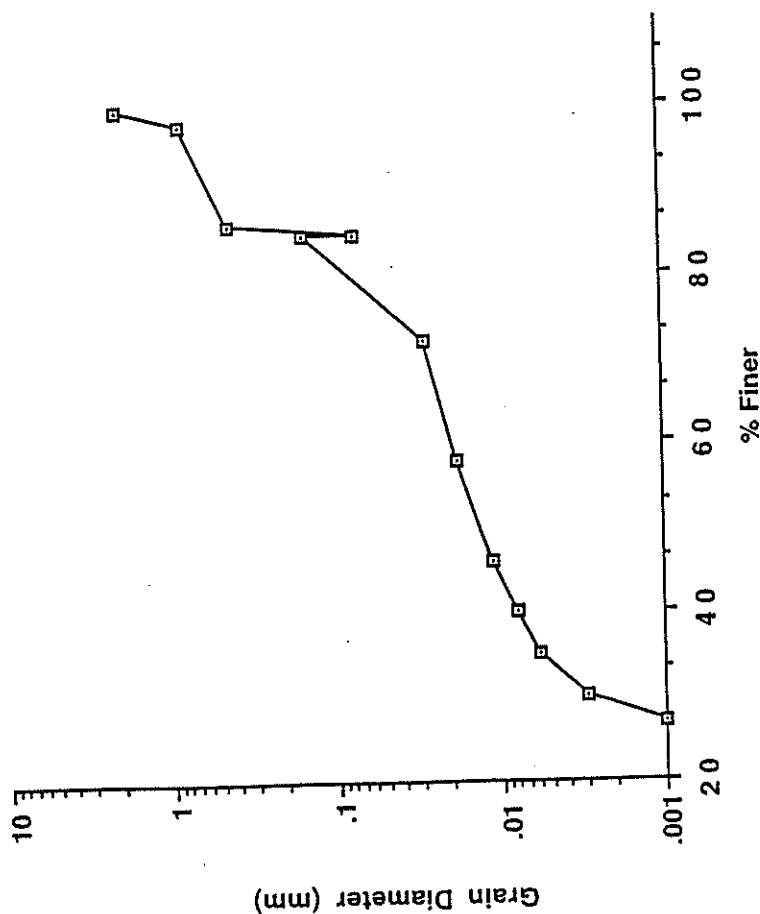


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S6 W7  
Test Date: 1/13/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.7    |
| 0.840               | 97.8    |
| 0.420               | 86.0    |
| 0.150               | 84.7    |
| 0.075               | 84.7    |
| 0.028               | 72.0    |
| 0.018               | 58.0    |
| 0.011               | 46.0    |
| 0.008               | 40.0    |
| 0.006               | 35.0    |
| 0.003               | 30.0    |
| 0.001               | 27.0    |



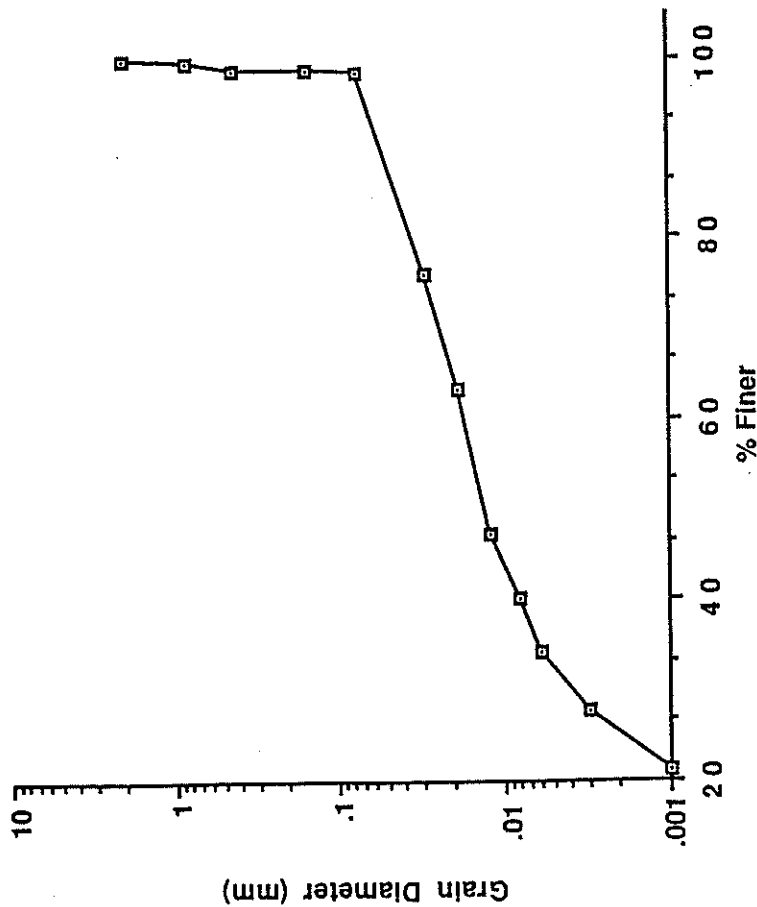


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S6 W7  
Test Date: 1/30/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 99.6    |
| 0.420               | 98.9    |
| 0.150               | 98.7    |
| 0.075               | 98.6    |
| 0.029               | 75.9    |
| 0.019               | 63.1    |
| 0.012               | 47.3    |
| 0.008               | 40.1    |
| 0.006               | 34.3    |
| 0.003               | 27.8    |
| 0.001               | 21.2    |



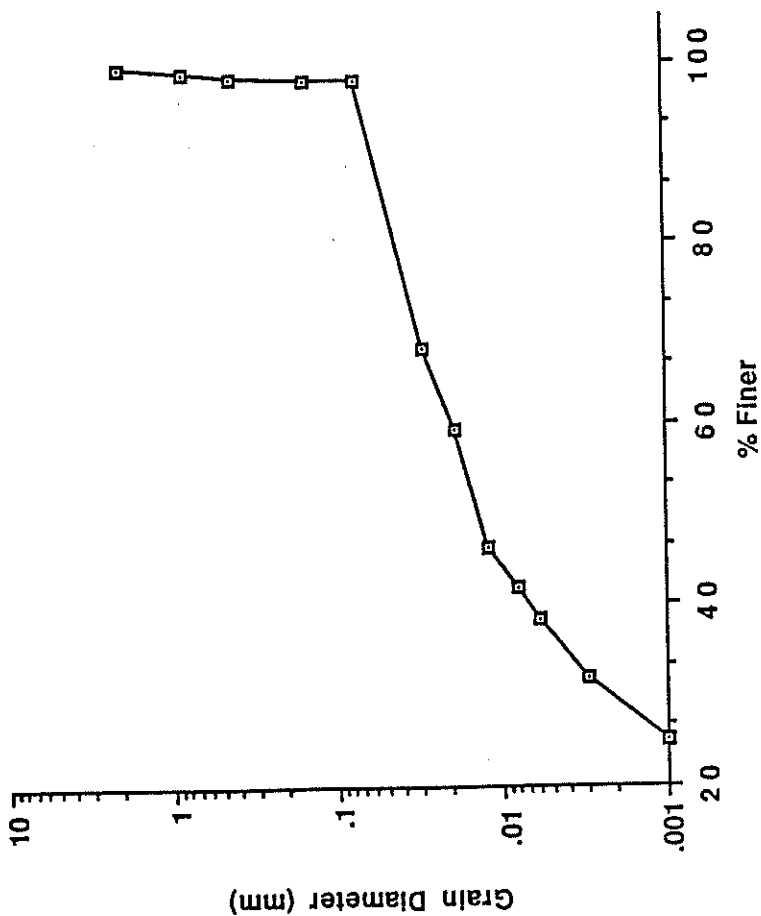


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S6 W9  
Test Date: 2/2/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.7    |
| 0.840               | 99.1    |
| 0.420               | 98.3    |
| 0.150               | 98.2    |
| 0.075               | 98.1    |
| 0.029               | 68.4    |
| 0.019               | 59.5    |
| 0.012               | 46.4    |
| 0.008               | 41.8    |
| 0.006               | 38.5    |
| 0.003               | 31.9    |
| 0.001               | 25.1    |



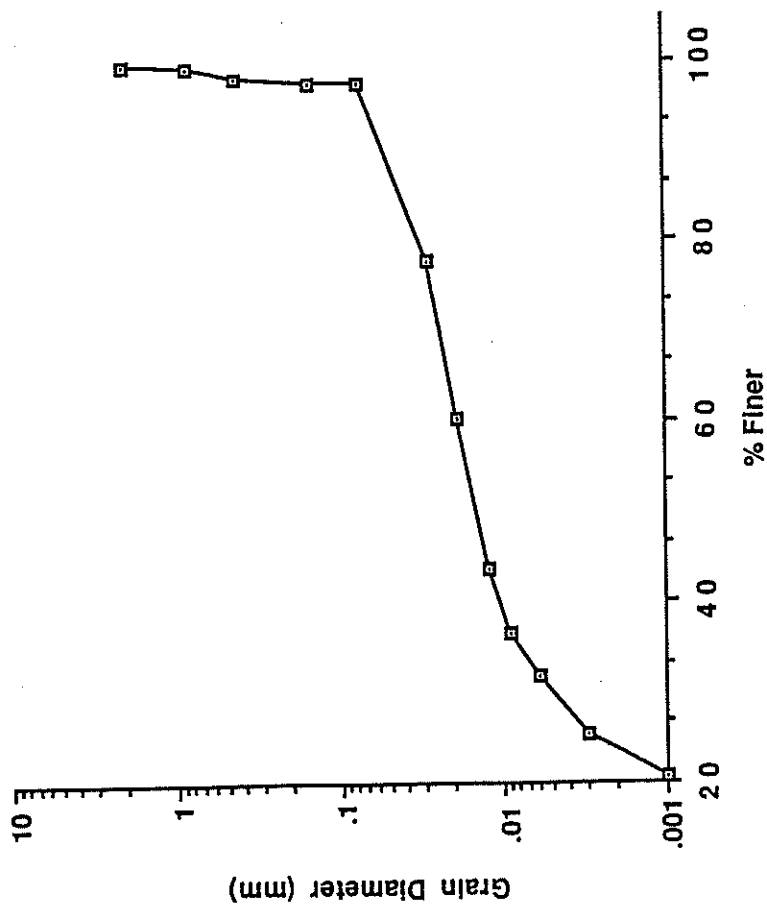


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S6 W9  
Test Date: 1/31/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.3           |
| 0.420                      | 98.3           |
| 0.150                      | 97.6           |
| 0.075                      | 97.5           |
| 0.028                      | 77.8           |
| 0.019                      | 60.3           |
| 0.012                      | 43.6           |
| 0.009                      | 36.7           |
| 0.006                      | 31.7           |
| 0.003                      | 25.4           |
| 0.001                      | 20.6           |



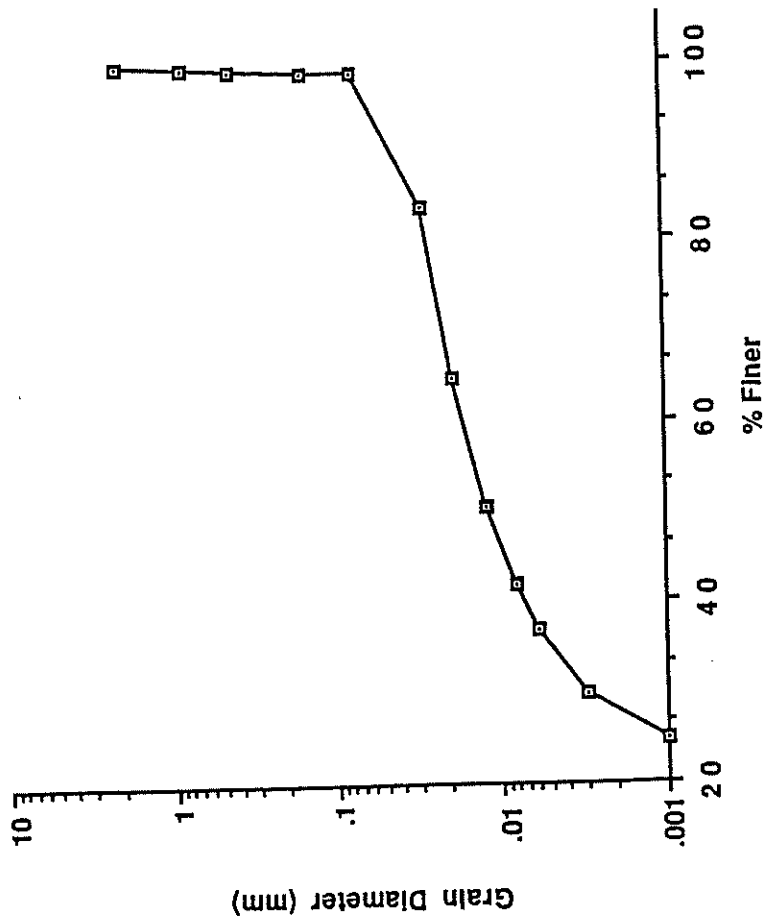


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S6 W11  
Test Date: 1/31/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.4    |
| 0.420               | 98.9    |
| 0.150               | 98.8    |
| 0.075               | 98.7    |
| 0.028               | 83.7    |
| 0.019               | 64.6    |
| 0.012               | 50.6    |
| 0.008               | 42.0    |
| 0.006               | 36.9    |
| 0.003               | 29.7    |
| 0.001               | 24.7    |



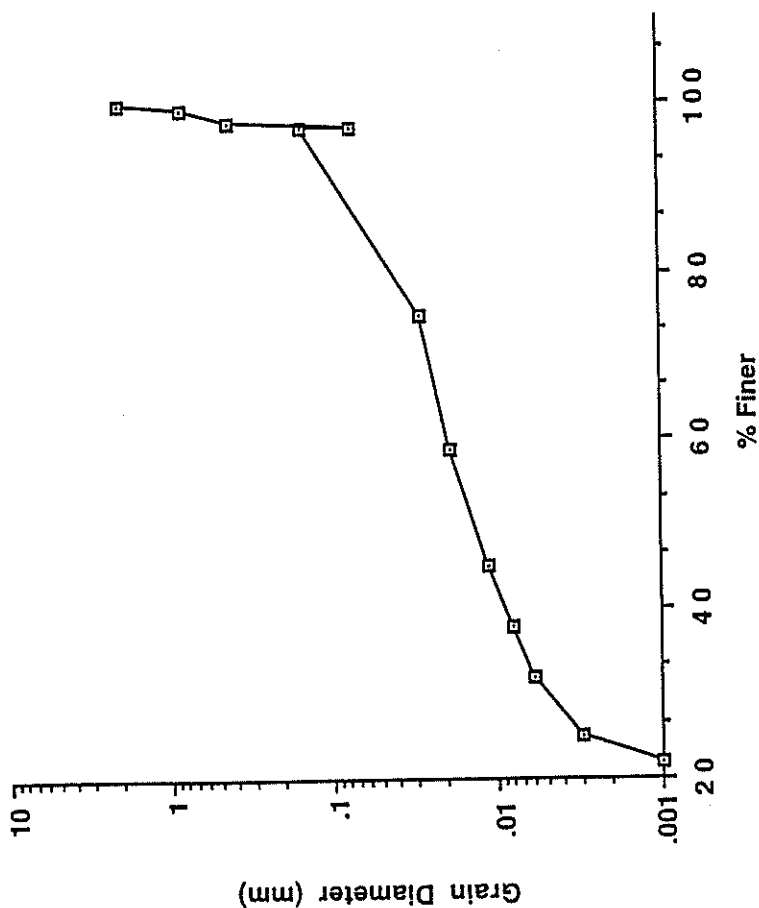


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S6 W11  
Test Date: 1/16/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.3    |
| 0.420               | 97.6    |
| 0.150               | 97.0    |
| 0.075               | 97.0    |
| 0.028               | 75.0    |
| 0.019               | 59.0    |
| 0.011               | 45.0    |
| 0.008               | 38.0    |
| 0.006               | 32.0    |
| 0.003               | 25.0    |
| 0.001               | 22.0    |



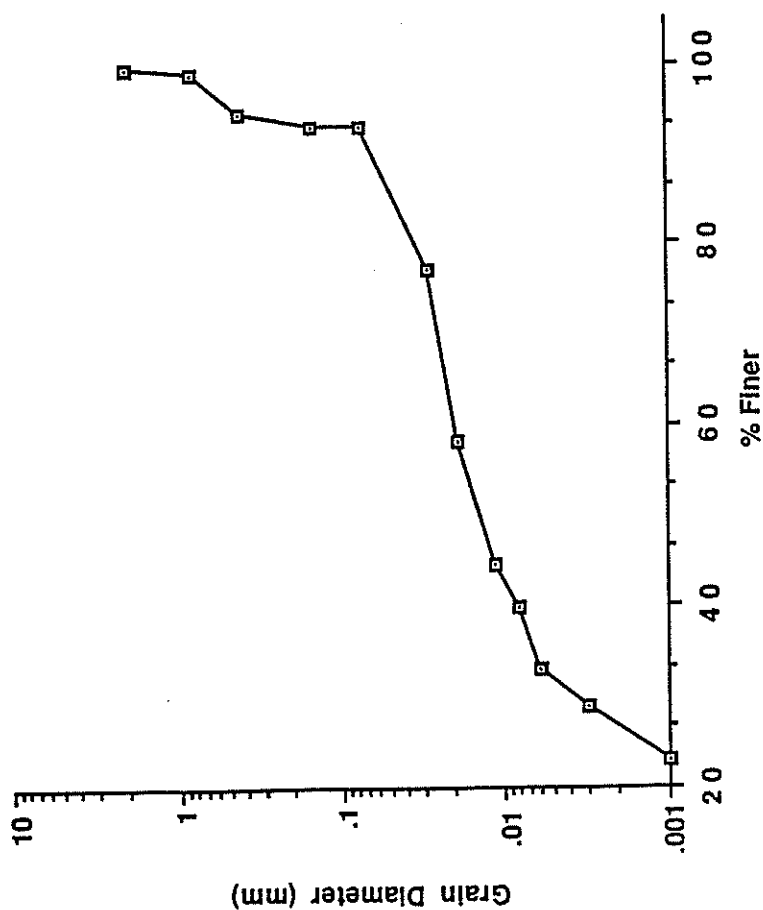


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S8 W5  
Test Date: 1/18/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.0    |
| 0.420               | 94.7    |
| 0.150               | 93.3    |
| 0.075               | 93.2    |
| 0.028               | 77.1    |
| 0.019               | 58.2    |
| 0.011               | 44.5    |
| 0.008               | 39.9    |
| 0.006               | 33.1    |
| 0.003               | 28.8    |
| 0.001               | 22.9    |



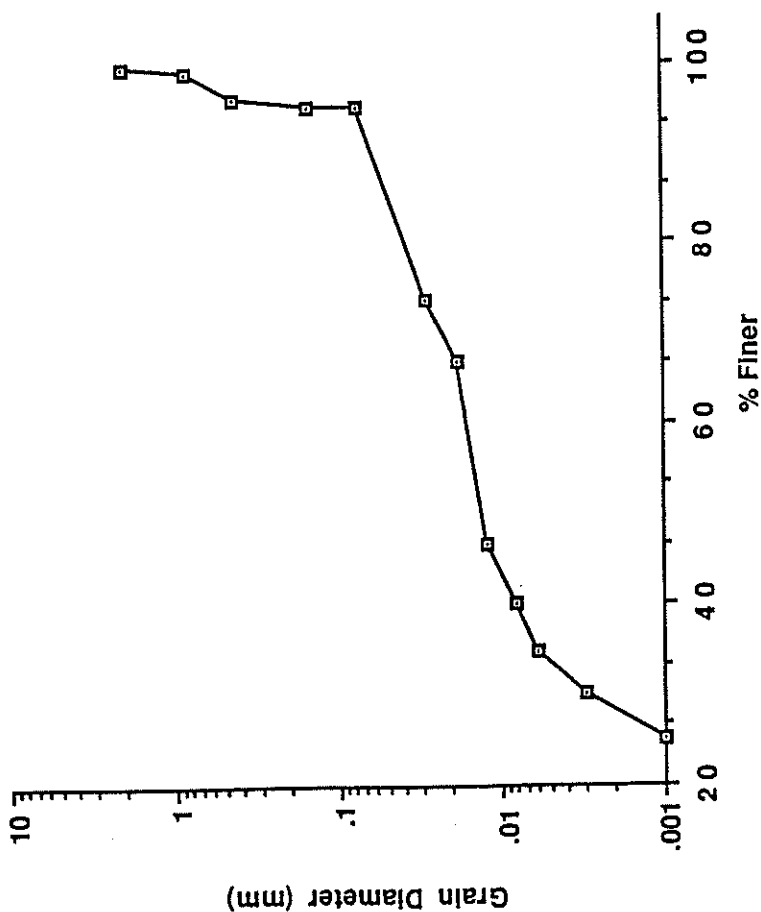


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S8 W5  
Test Date: 2/2/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.1           |
| 0.420                      | 96.1           |
| 0.150                      | 95.3           |
| 0.075                      | 95.2           |
| 0.028                      | 73.6           |
| 0.018                      | 66.9           |
| 0.012                      | 46.6           |
| 0.008                      | 40.2           |
| 0.006                      | 34.9           |
| 0.003                      | 30.2           |
| 0.001                      | 24.9           |



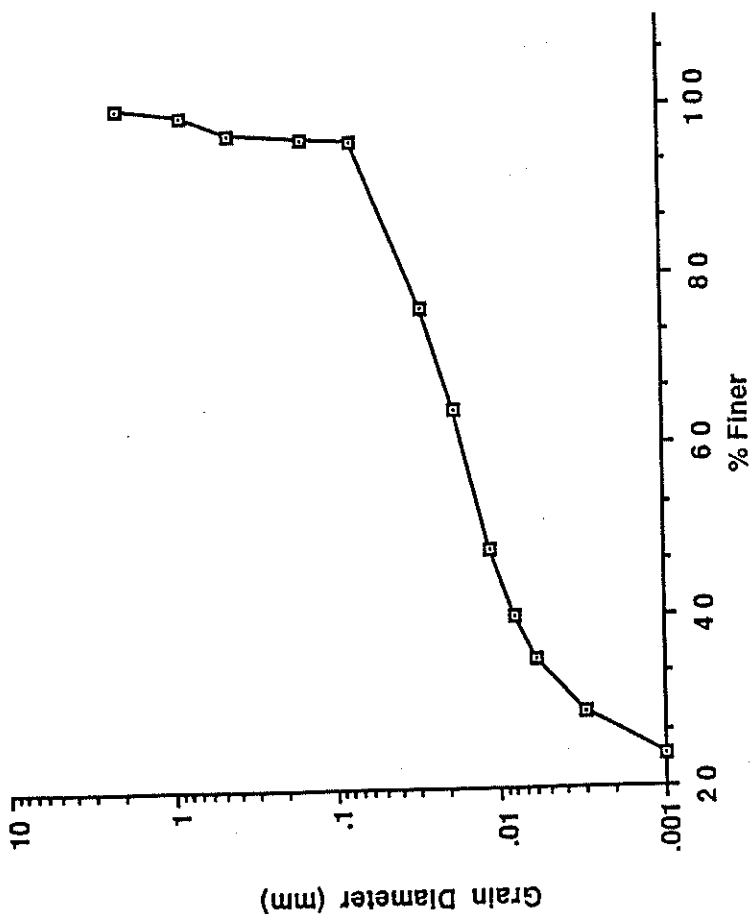


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S8 W7  
Test Date: 2/1/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.2           |
| 0.420                      | 96.7           |
| 0.150                      | 96.1           |
| 0.075                      | 96.0           |
| 0.028                      | 76.0           |
| 0.018                      | 64.2           |
| 0.011                      | 48.0           |
| 0.008                      | 40.0           |
| 0.006                      | 35.0           |
| 0.003                      | 28.7           |
| 0.001                      | 23.9           |





# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S8 W7  
Test Date: 1/25/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.0           |
| 0.840                      | 97.2           |
| 0.420                      | 89.8           |
| 0.150                      | 88.2           |
| 0.075                      | 88.1           |
| 0.030                      | 68.0           |
| 0.020                      | 55.7           |
| 0.012                      | 44.6           |
| 0.009                      | 38.2           |
| 0.006                      | 32.6           |
| 0.003                      | 29.4           |
| 0.001                      | 21.7           |

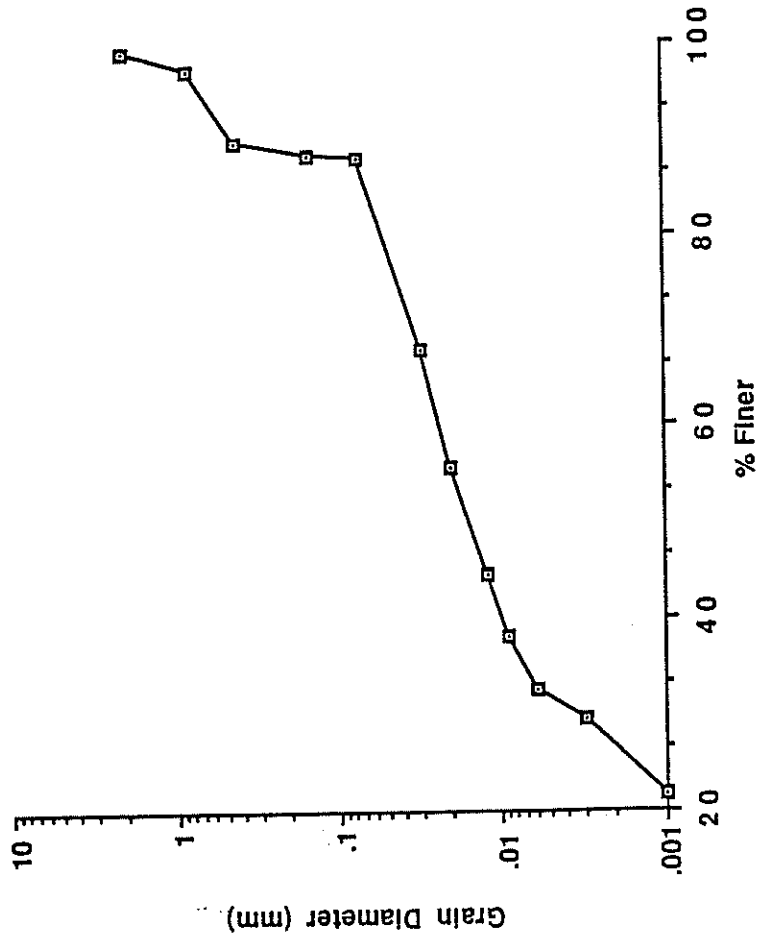




TABLE 2 PROCTOR, PERMEABILITY  
DATA SUMMARY

| <u>% Moisture</u> | <u>Dry Density (lb/cft)</u> | <u>Permeability (cm/sec)</u> |
|-------------------|-----------------------------|------------------------------|
| S2 W3 #1          |                             |                              |
| 16.4              | 105.3                       | $6.9 \times 10^{-8}$         |
| 17.3              | 108.3                       | $1.0 \times 10^{-9}$         |
| 19.6              | 106.6                       | $1.5 \times 10^{-9}$         |
| 23.0              | 100.9                       | $1.1 \times 10^{-9}$         |
| 25.7              | 99.9                        | $4.3 \times 10^{-9}$         |
| S6 W11 #1         |                             |                              |
| 13.0              | 99.8                        | $2.2 \times 10^{-8}$         |
| 16.3              | 104.7                       | $4.7 \times 10^{-9}$         |
| 18.0              | 105.7                       | $2.6 \times 10^{-9}$         |
| 21.2              | 104.7                       | $3.1 \times 10^{-9}$         |
| 24.5              | 96.7                        | $2.2 \times 10^{-9}$         |
| S8 W7 #1          |                             |                              |
| 12.0              | 111.7                       | $1.9 \times 10^{-8}$         |
| 14.2              | 114.9                       | $4.1 \times 10^{-9}$         |
| 16.6              | 112.3                       | $3.3 \times 10^{-9}$         |
| 17.9              | 111.4                       | $3.1 \times 10^{-9}$         |
| 22.6              | 101.2                       | $5.0 \times 10^{-9}$         |

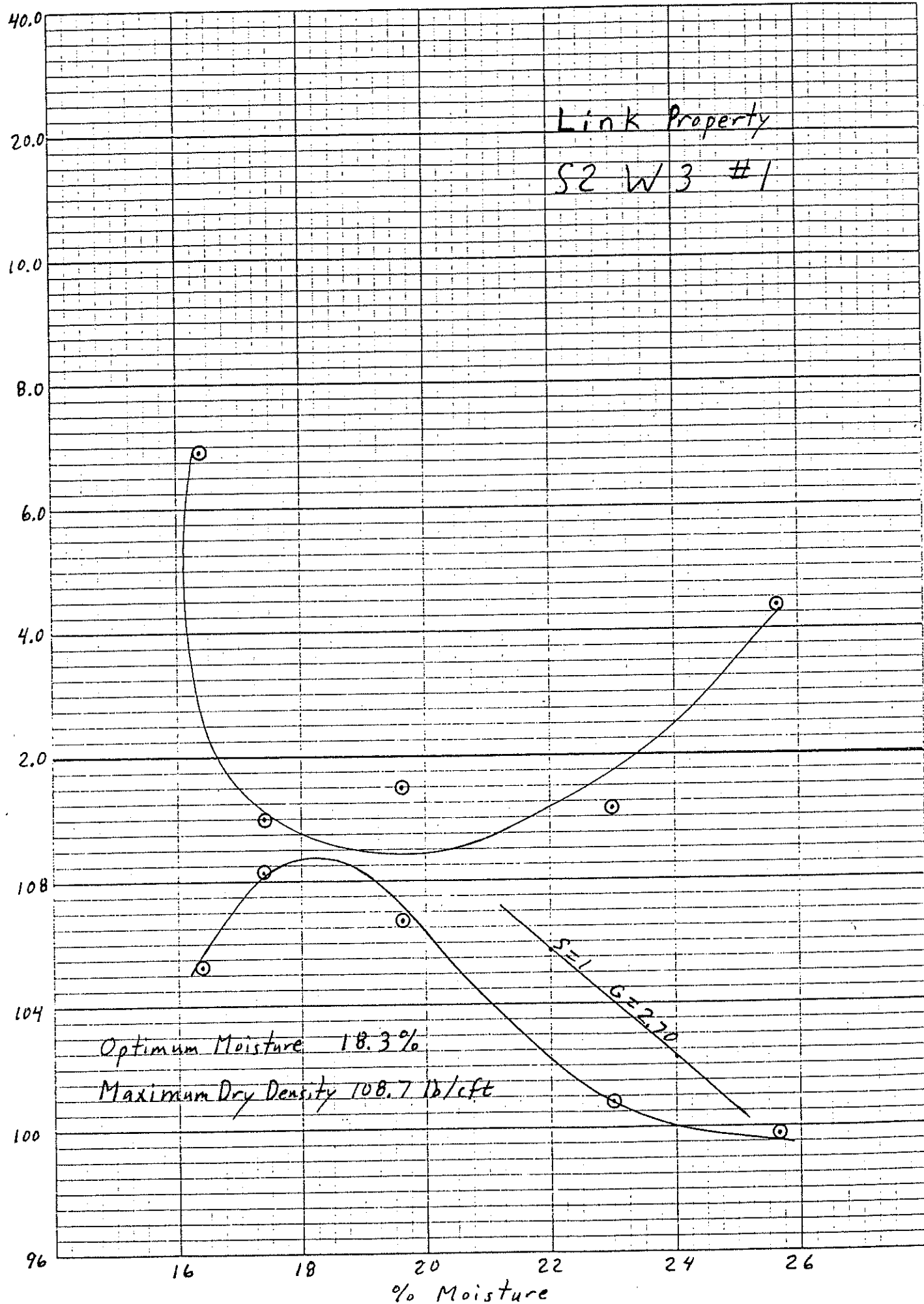


permeability ( $1 \times 10^{-9}$  cm/sec)

Dry Density (lb/cft)

Link Property

S2 W3 #1





Permeability ( $1 \times 10^{-9}$  cm/sec)

Link Property

SG W11 #1

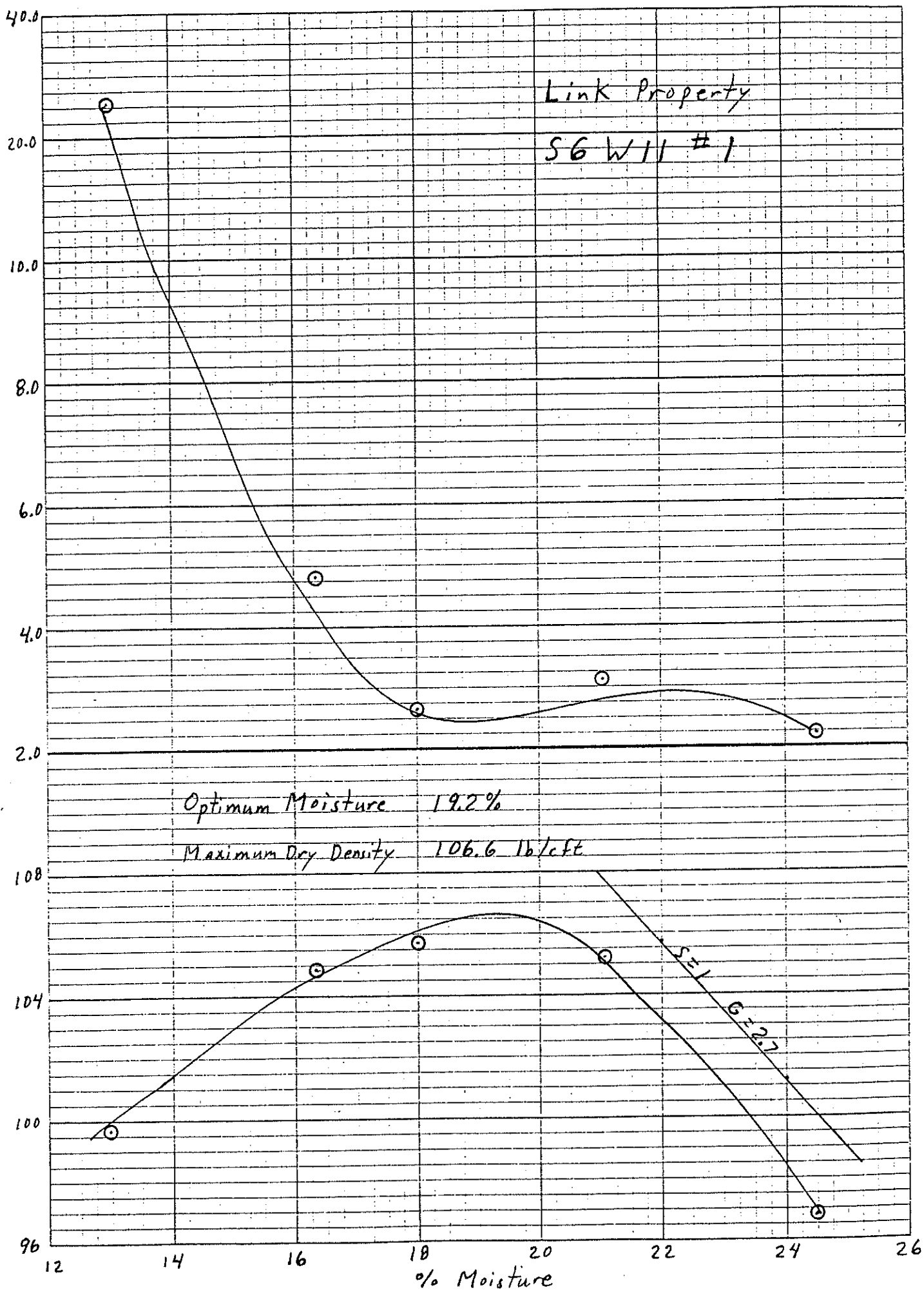
Dry Density (lb/cft)

Optimum Moisture 19.2%

Maximum Dry Density 106.6 lb/cft

SH  
62.7

% Moisture





Permeability ( $1 \times 10^{-9}$  cm/sec)

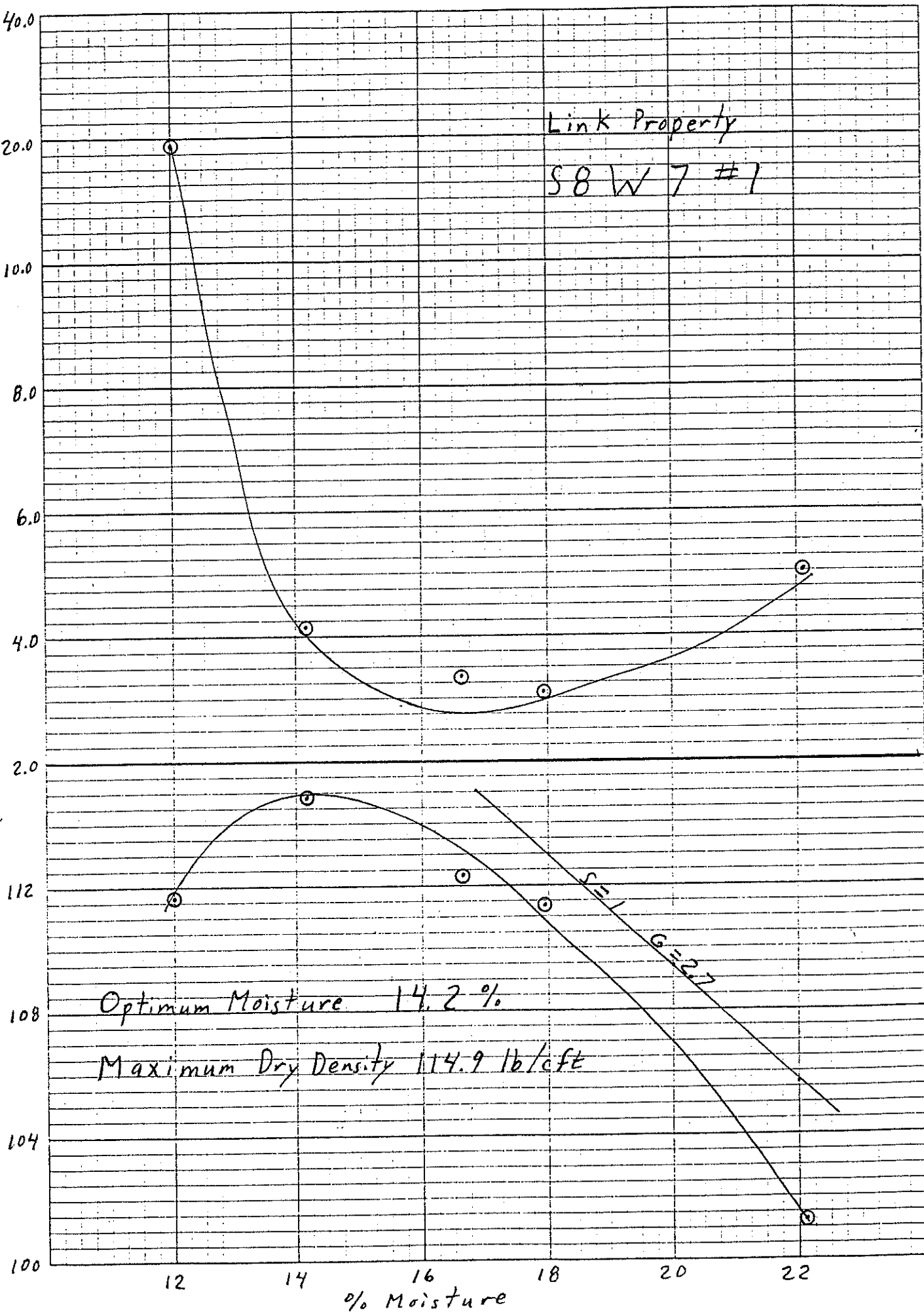
Link Properly

S8 W 7 #1

Dry Density (lb/cft)

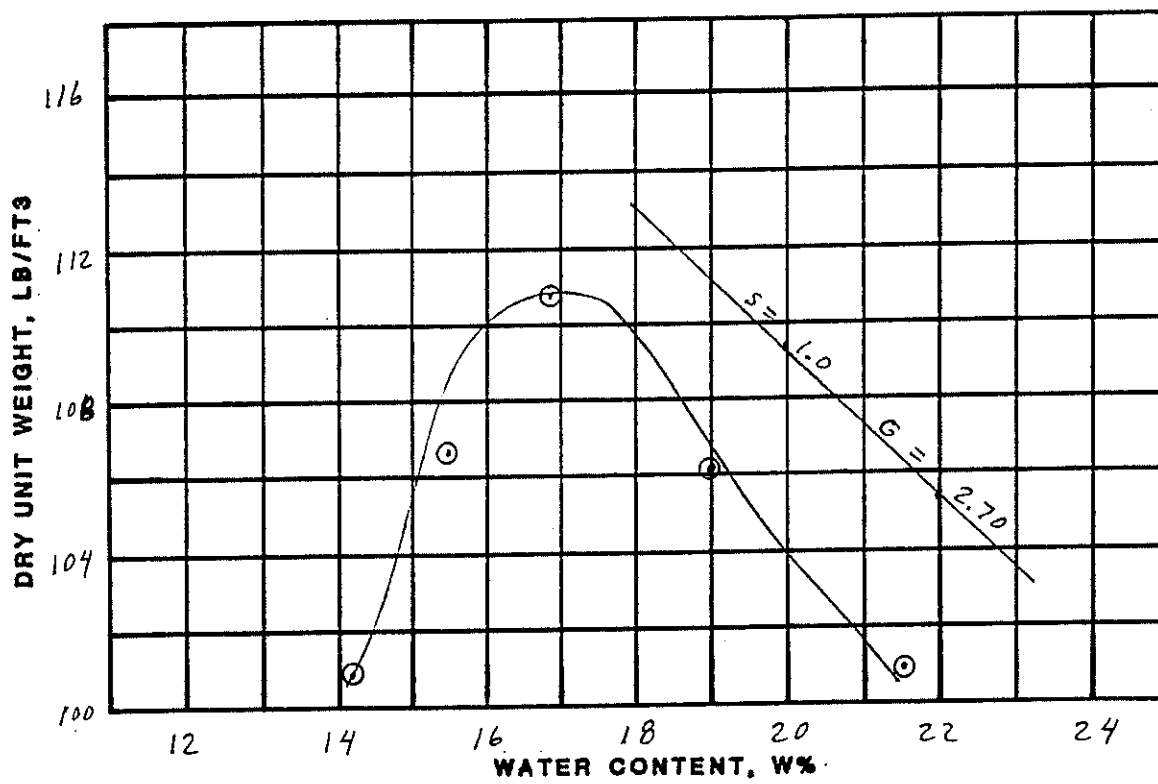
Optimum Moisture 14.2 %

Maximum Dry Density 114.9 lb/cft





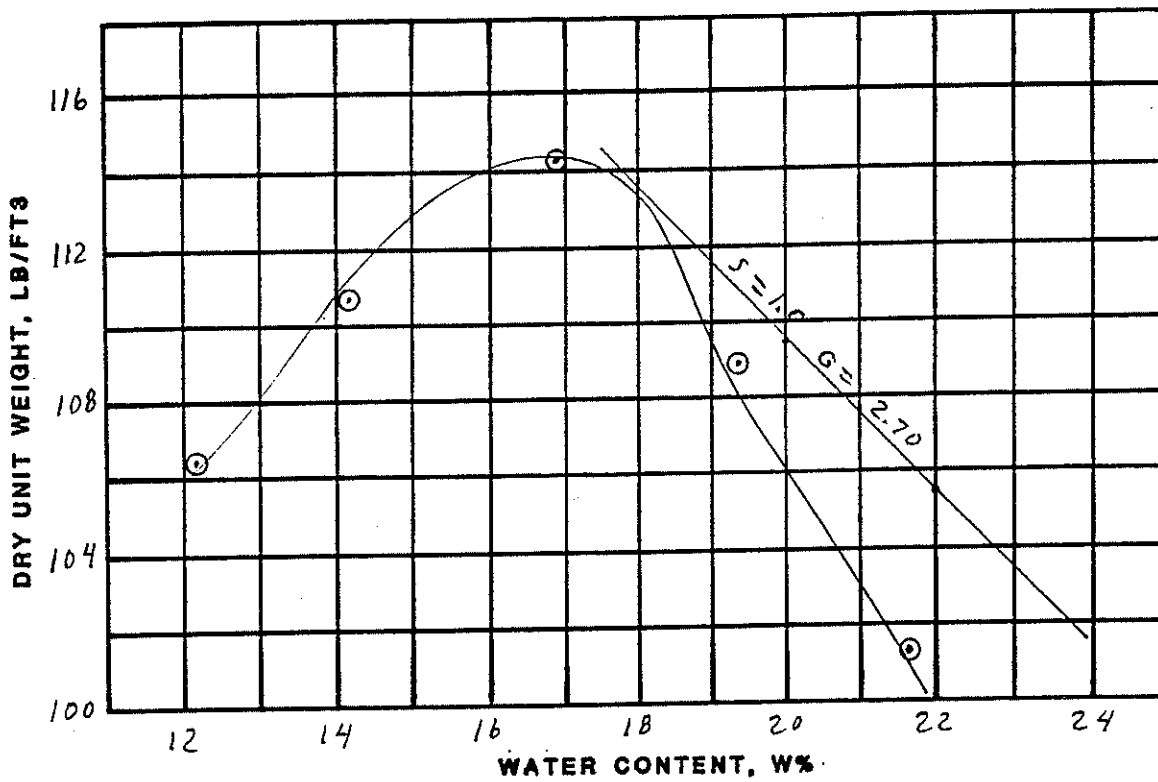
LINK PROPERTY  
MODIFIED PROCTOR  
SO W9



OPTIMUM MOISTURE = 17.0 %  
MAXIMUM DRY UNIT WEIGHT = 110.5 lb/cft



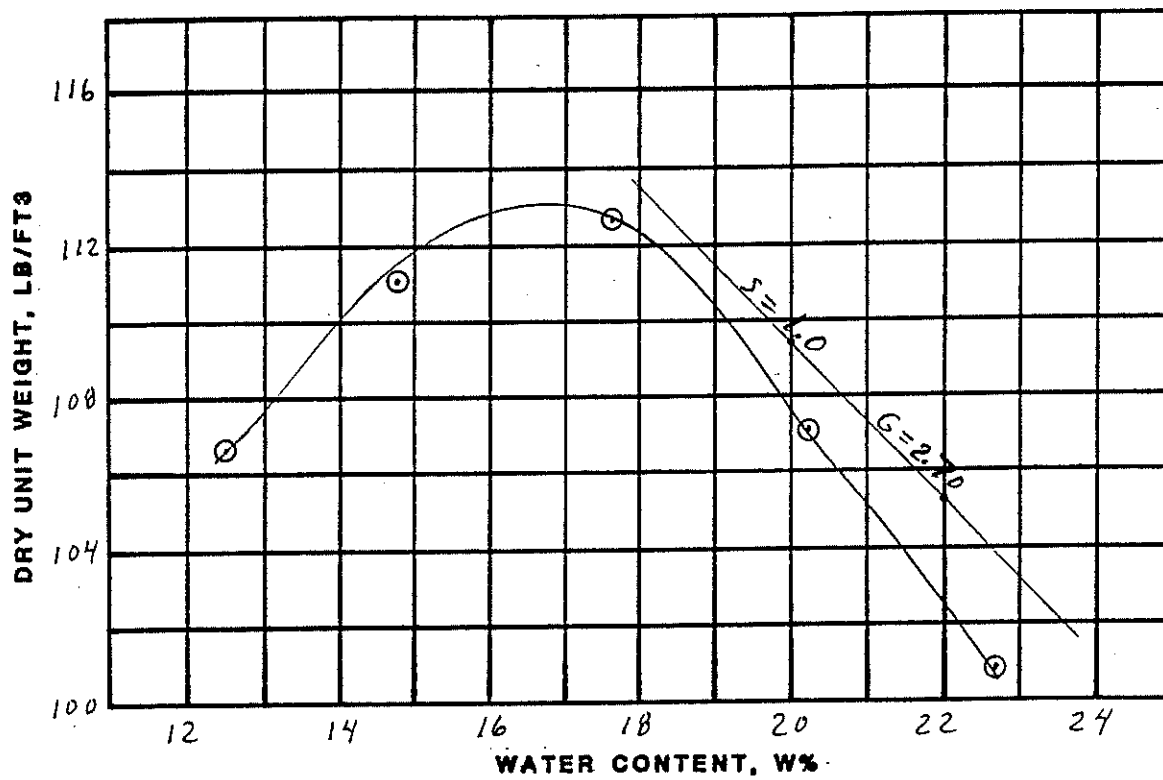
LINK PROPERTY  
MODIFIED PROCTOR  
S2 W11



OPTIMUM MOISTURE = 16.9 %  
MAXIMUM DRY UNIT WEIGHT = 114.2 lb/cft



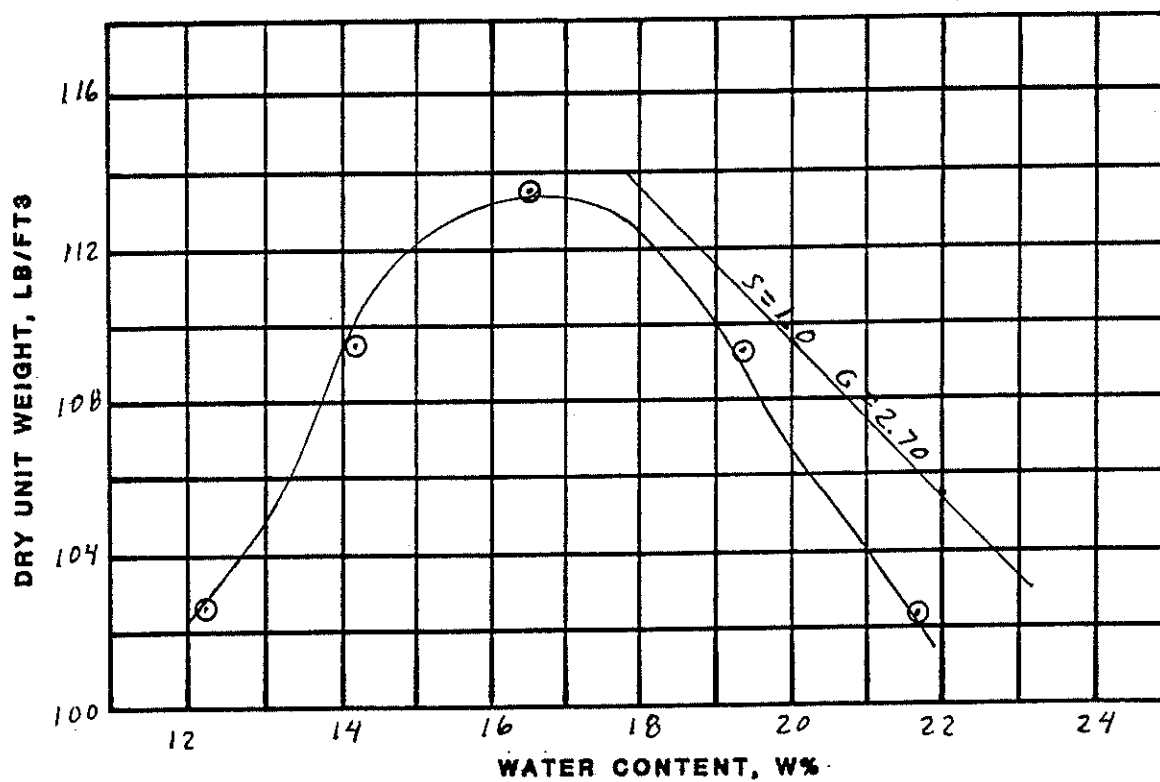
LINK PROPERTY  
MODIFIED PROCTOR  
S4 W5



OPTIMUM MOISTURE = 16.8 %  
MAXIMUM DRY UNIT WEIGHT = 112.9 lb/cft



LINK PROPERTY  
MODIFIED PROCTOR  
S6 W9



OPTIMUM MOISTURE = 16.5 %  
MAXIMUM DRY UNIT WEIGHT = 113.5 lb/cft



PROPOSED USE: governmental use - mineral extraction

AREA: 77.0 acres



**DANE COUNTY**  
**CONDITIONAL USE PERMIT #1132**

PAGE 1 of 3

THE ZONING AND NATURAL RESOURCES COMMITTEE OF THE DANE COUNTY BOARD PURSUANT TO SECTION 10.255 (2) OF THE DANE COUNTY CODE OF ORDINANCES DOES HEREBY:

GRANT the conditional use permit subject to conditions.

FOR: Governmental Use, mineral extraction, clay borrow site

EFFECTIVE DATE OF PERMIT: 05/24/94 EXPIRATION: none specified

THE CONDITIONAL USE SHALL BE LOCATED ON THE PROPERTY DESCRIBED AS FOLLOWS:

Part of the SW 1/4 NE 1/4 and W 1/2 SE 1/4 Section 33, Town of Cottage Grove described as follows: Beginning at the Southeast corner of the SW 1/4 NE 1/4; thence Northwesterly along the centerline of USH 12, 775.5 feet; thence Southwest 470.25 feet to a point on the South line of said Southwest 1/4 Northeast 1/4, thence Westerly along the South line of SW 1/4 NE 1/4, 346.5 feet to the West line of the Southeast quarter of Section 33; thence Southerly along said West line 884.3 feet; thence N 85° 08' East, 235.9 feet thence S 03° 13' East parallel to the centerline of CTH N 170 feet; thence S 85° 08' West, 140 feet; thence continue S 85° 08' West, 98.5 feet to a point on said West line 272 feet North of the Southwest corner of the NW 1/4 SE 1/4, Section 33; thence Southerly along said West line 998 feet; thence East 363 feet; thence South parallel to said West line to South line of said Section; thence Easterly along said South Section line approximately 957 feet to the Southeast corner of the SW 1/4 SE 1/4 of Section 33; thence Northerly approximately 2650 feet to the point of beginning.

THE ZONING AND NATURAL RESOURCES COMMITTEE AFTER PUBLIC HEARING AND IN THEIR CONSIDERATION OF THE CONDITIONAL USE PERMIT MADE THE FOLLOWING FINDING OF FACT:

1. That the establishment, maintenance and operation of the proposed conditional use will not be detrimental to or endanger the public health, safety, morals, comfort or general welfare.
2. That the uses, values and enjoyment of other property in the neighborhood for purposes already permitted will not be substantially impaired or diminished by the establishment, maintenance and operation of the proposed conditional use.
3. That the establishment of the proposed conditional use will not impede the normal and orderly development and improvement of the surrounding property for uses permitted in the district.
4. That adequate utilities, access roads, drainage and other necessary site improvements will be made.
5. That adequate measures will be taken to provide ingress and egress so designed as to minimize traffic congestion in the public streets.
6. That the proposed conditional use does conform to all applicable regulations of the district in which it is proposed to be located.



**CONDITIONS**  
**CONDITIONAL USE PERMIT #1132**

PAGE 2 of 3

These conditions are specifically made applicable to this permit, any violation of such conditions shall be sufficient grounds for revocation of this permit.

1. Hauling shall be on USH 12-18 to the Landfill.
2. Approximately ten acres of land will be opened up for clay extraction at one time. When the excavation is complete on the first ten acres, the next ten acres will be stripped of topsoil. That topsoil will then be placed on the first ten acres stripped. This procedure will then be repeated for the following acres. After the topsoil is replaced it will be graded and seeded.
3. Soil erosion control measures will be required and enforced. Siltation fences will be constructed as required.
4. Hours of operation will be 6:30 a.m. to 5:30 p.m. Truck hauling will be limited to 8:00 a.m. to 4:00 p.m. The intent is that work days shall be Monday through Friday with the exception of an occassional Saturday for rain make-up.
5. A good faith effort will be made to leave several inches of clay on site. Surface of topsoil will be prepared prior to seeding such that roots could be established.
6. The land will be kept in grassland/hay production for an initial five year period to allow soil structure to become re-established, and to assure no harmful effects to area groundwater.
7. After this initial period, the reintroduction of a more intense land use such as row-crop agriculture may be allowed based on soil test results and committee approval.
8. The Town Board will be notified of any requested changes in land use.
9. Soil testing shall include remapping based on soil borings. In addition, test plots shall be done to determine yields on the rebuilt soil so future nitrogen can be closely tied to yield expectations.
10. Land use must follow State standards for nutrients and pesticides currently being set by the U.W., State and Federal agencies. (These standards will be in effect before a petition for a land use change can be made, and they will establish specific soil series application rates for agricultural chemicals for the entire State of Wisconsin.)
11. All construction equipment and vehicles will be fueled and stored on land that has not had the clay removed. Farm equipment will also be stored and fueled on land that is not disturbed.



CONDITIONS  
CONDITIONAL USE PERMIT 1132

PAGE 3

12. Clay extraction will be limited to the deep, low-lying soils in the valley bottom. The steep, adjacent side-slopes will not be excavated.
13. Expansion into the Southern site area shall be subject to review and approval of the project by the Zoning & Natural Resources Committee.
14. Measures to insure safe ingress & egress for trucks shall be implemented.
15. Measures to suppress dust shall be implemented and maintained.
16. Access to and protection of the existing grave site shall be provided.

EXPIRATION OF PERMIT

Section 10.25 (2) (n) of the Dane County Code of Ordinances provides that any use for which a conditional use permit has been issued, upon its cessation or abandonment for a period of one year, will be deemed to have been terminated and any future use shall be in conformity with the ordinance.



## 1. PROPOSED LINK CLAY BORROW SITE

### 1.1 Introduction

The plan of operation for the Dane County Landfill Expansion Rodefild Site No. 2 dated November 1993 and the subsequent approval letter dated March 14, 1994 require the use of the Farm Credit Bureau Clay Borrow Site in the Town of Westport as the source for off-site clay for liner and cap construction. Because of the long haul distance involved with using the Farm Credit Bureau Site, Dane County Public Works Department has sought to identify an additional clay borrow source that is closer to the Rodefild Landfill (see Plan Sheet 1). The process of identifying and characterizing the proposed Link clay borrow source was done in accordance with NR 512.18, Wis. Adm. Code. The proposed site has also been evaluated to assure compliance with the performance standards specified in NR 504.04(4)(a)(b) and (c), Wis. Adm. Code.

To identify clay resources which meet the project specifications and contain the clay volume required, a subsurface investigation and subsequent lab analyses of collected samples was conducted for the potential clay borrow source. Twenty-four backhoe pits were dug at the 18-acre site during December 1994 with the subsequent lab analyses being completed during February 1995. The clay from the proposed Link borrow site will initially be used for the construction of the liner for Phase I of the Rodefild expansion during the spring of 1995. The clay will meet the clay specifications contained in NR 504.05:

- (a) A minimum of 50% by weight which passes the 200 sieve (P200).
- (b) A clay size content of 25% by weight or greater.
- (c) A saturated hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less.
- (d) A liquid limit of 30% or greater.
- (e) A plasticity index of 15% or greater.
- (f) Compacted to 90% modified or 95% standard Proctor density or greater.

The clay from the proposed Link borrow site will be used to construct the four foot thick compacted clay liner for the 11.4 acre Phase I expansion to the Rodefild Landfill. It is estimated that this liner will require approximately 85,000 cubic yards of compacted clay. Applying a 25% increase to this volume estimate to allow for shrinkage and losses during hauling and placement, as well as excavation losses from separating usable and unusable materials, results in a total required clay volume of 106,000 cubic yards. Based on a 18 acre borrow site and the clay thicknesses measured during the subsurface investigation, the estimated quantity of clay available at the Link borrow site is 150,000 cubic yards. A clay isopach map of the site based on observed clay thicknesses at the test pits is presented on Plan Sheet 2.

Prior to conducting the subsurface investigation at the proposed Link clay borrow site, Dane County contacted the DNR district office and arranged for an initial site inspection. Dave Carper of the DNR central office and Lynn Hummel of the DNR Southern District Office met with Al Czecholinski from Dane County Department of Public Works on December 1, 1994 for the initial site inspection. The DNR personnel agreed that the site was in compliance with all applicable performance standards, and that Dane County could proceed with the site characterization study. The site was also assessed by the Wisconsin Department of Agriculture, Trade, and Consumer Protection, the WDNR Bureau of Endangered Resources, and the State Historical Society of Wisconsin. Copies of their letters are found in Appendix B. In addition, the necessary approvals from Dane County Zoning have been obtained.

### 1.2 Characterization of the Link Borrow Source

The proposed borrow source is part of a 77 acre parcel located in part of the W1/2 of the SE 1/4, and part of the SW1/4 of the NE1/4 of Section 33, Township 7N, Range 11E, Town of Cottage Grove, Dane County, Wisconsin. The location of the site is shown on Plan Sheet 1. The land is currently owned by



Dane County. The clay will be extracted from approximately 18 acres of land that has previously been used for row-crop agriculture..

During December 1994, Dane County personnel excavated 24 backhoe pits at approximately 200 foot intervals after a 200-foot grid system was established within the property boundaries. Two representative samples were taken from each test pit and a lab testing program was conducted on the samples by Ashco, Inc. Soil test locations are shown on Plan Sheet 3.

The lab analyses included grain size distribution to the 0.001 mm particle size and Atterberg limits on all of the samples. In addition, moisture-density relationship (Modified Proctor) and compaction-permeability relationship tests were performed on selected samples. Results of all lab analyses of the samples obtained at the Link site are contained in the attached soil testing report prepared by Ashco, Inc. A total of 48 grain size analyses, 48 Atterberg limits, 7 moisture-density relationship and 3 compaction-permeability relationship tests were performed on the samples taken at the site.

Based on the field logs of the test pits, the subsurface profile at the site consists of, in descending order, a variable thickness of silt loam topsoil over brown and mottled-brown lean clay. The soil types present at the proposed site are classified by the USDA Soil Conservation Service as the Plano and Radford silt loams. Although it varied in thickness, the clay stratum was continuous over the entire site. The geologic origin of the clay stratum is interpreted as aeolian, or wind deposited materials. These wind-blown deposits, or loess, consisting of primarily silt and clay size particles were picked up by wind as glacial ice retreated and redeposited over previous glacial deposits. These underlying glacial materials consist of poorly sorted, unstratified glacial till or sand and gravel (outwash) deposits. While the soils covering most of the site were formed in the loess deposits, several acres near the center of the site, the Radford soils, contain soils in which both the former A-horizon plus the underlying clay strata are buried under more recently deposited silty alluvium.

As shown in Table 1, the soil sample test results indicate that the clay at the site is primarily a low to medium plasticity clay, classified as CL soil by the Unified Soil Classification System. The shallow clay sample taken from a test pit was labeled Sample No. 1 with the deeper sample designated as No. 2. For test pits where moisture-density or compaction-permeability tests were performed, Sample No. 1 was a composite of sample taken from the entire clay thickness with Sample No. 2 continuing to be a deep sample. Compaction-permeability relationship curves developed on 3 clay samples indicate that the clay meets specifications for permeability criteria when properly compacted at a moisture content at or above the optimum moisture content of the soil (see Table 2).

A clay isopach map (see Plan Sheet 2) was prepared from clay thickness data obtained during the site investigation and on the lab test results. It is estimated that 150,000 cubic yards of clay soil could be extracted from the 18 acre borrow site.

### 1.3 Laboratory Testing Frequency Summary

The following testing is required by NR 512.18:

- (a) Ten test pits for the first 5 acres and one test pit for each additional acre or less.
- (b) A minimum of 2 samples from each pit shall be collected and tested for grain size distribution to the 0.002 millimeter particle size and Atterberg limits.
- (c) A minimum of 5 samples for the first 10 acres and one additional sample per acre or less shall be tested for moisture-density using a 5 point Proctor curve.
- (d) A minimum of 20% of the samples used to develop the Proctor curves shall be used to determine the compaction-permeability relationship.
- (e) All samples shall be classified according to the Unified Soil Classification System.



Based on the above test frequency requirements, comparison of the number of tests required and the number performed at the proposed 18 acre Link borrow site is shown below:

|           | <u>Test<br/>Holes</u> | <u>Atterberg<br/>Limits</u> | <u>Grain Size<br/>Analyses</u> | <u>Proctor<br/>Curves</u> | <u>Compaction-<br/>Permeability<br/>Relationships</u> |
|-----------|-----------------------|-----------------------------|--------------------------------|---------------------------|---|
| Required  | 23                    | 46                          | 46                             | 7                         | 2   |
| Performed | 24                    | 48                          | 48                             | 7                         | 3   |

A review of the number of test pits and the number of lab analyses performed indicates that the soil testing requirements were met.

#### 1.4 Borrow Area Development and Material Removal

The Link clay borrow area will be developed in phases, in order to minimize erosion and associated sedimentation problems, as well as to prevent the double handling of topsoil to the maximum extent possible. A temporary sedimentation basin and other erosion control measures will be installed during the initial stages of borrow area development to minimize the impact of erosion of on-site soils which have been disturbed by borrow area operations.

The clay extraction/reclamation plan consists of the following work to be done during 1995.

1. Beginning in March 1995, erect truck entrance signs on USH 12/18 in accordance with the WDOT.
2. Improve the existing field entrance with breaker run for use as the construction entrance. The entrance will be approximately 24 feet wide and will be secured with a gate as required.
3. A sedimentation basin, approximately 125 feet by 125 feet by 4 feet deep, will be constructed in the location shown on Plan Sheet 4. The soil materials excavated from the basin will be used to construct a berm parallel to USH 12/18. In addition, 100 linear feet of silt fence with steel posts and woven wire support will be installed to prevent site erosion.
4. Phase I will consist of stripping the topsoil on the west half of the site and stockpiling it on the east half. The clay layer will then be extracted from the west half. After clay extraction, the west half of the site will be regraded and the topsoil shall be replaced.
5. Phase II consists of the removal and stockpiling the topsoil followed by clay extraction on the east half of the site. After the clay extraction is complete, the east half shall be reclaimed by regrading, replacing the topsoil, and seeding the site. The sedimentation basin area will be reclaimed such that a permanent pond shall not be created. All excavation and reclamation work at the site shall be completed by the end of 1995.

The clay removal operations will be accomplished using conventional methods. The topsoil will be removed and stockpiled using scrapers. The suitable clay soils will be removed using a backhoe and loaded on trucks for transportation to the landfill site. The material will be deposited directly at locations where required during the construction of the liner. Some disking and/or scarifying of the clay may be required to lower the natural moisture content to levels necessary to achieve the specified compaction. The moisture content at compaction will be maintained at or above optimum moisture.

The borrow activities will be monitored in the field to assure the segregation of suitable clay soils from material not meeting project specifications. Quality control will be maintained primarily by visually observing clay and non-clay materials and their transition with depth as the usable material is removed. In cases where visual differentiation of materials is uncertain, soil samples will be obtained for lab verification testing. In addition, soil testing of the clay as it is placed will be conducted in accordance with NR 516.05 for Atterberg limits, grain size distribution, Shelby tube permeability, and compaction-permeability. Material which is considered unsuitable for use will be segregated and eventually used as fill dirt for grading purposes.



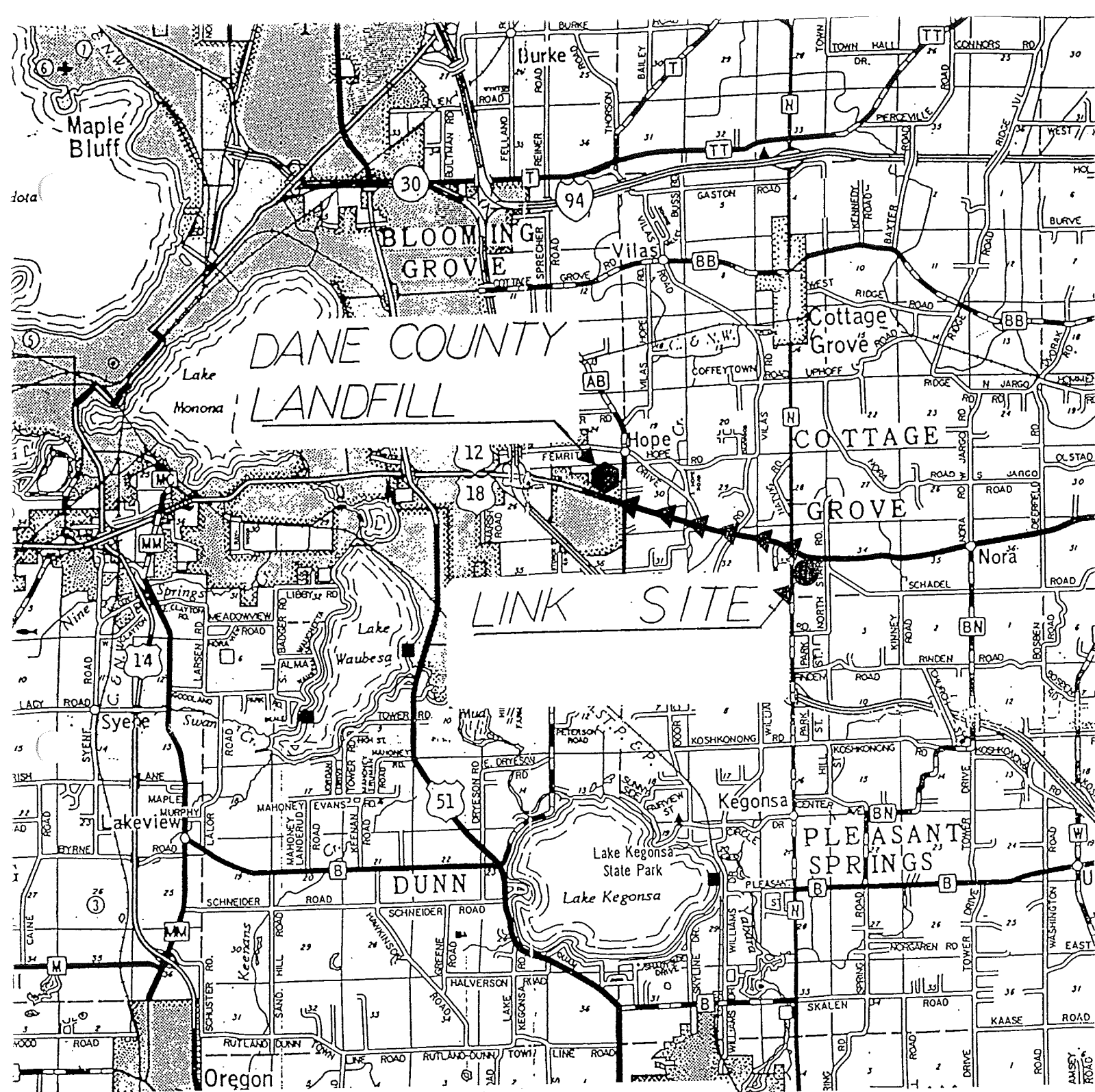
### 1.5 Transportation

Clay soils removed from the proposed Link borrow source will be hauled by truck from the borrow site to Dane County Landfill Site No. 2 (Rodefild). The trucks will travel approximately 3 miles on U.S. Highway 12/18 from the Link site to the landfill (see Plan Sheet 1).

### 1.6 Restoration

Borrow area restoration will begin immediately following clay removal operations. Once the removal operations are completed, grades will be established for maintaining positive surface water drainage and sedimentation control. The movement of surface waters from the restored site will continue to be toward the north/northeast through the culvert under U.S. Highways 12/18 as it is at present. Upon completion of the site grading, topsoil will be restored by uniformly spreading a minimum of 6 inches of topsoil over all excavated areas. After the topsoil is spread, the area will be fertilized in accordance with N-P-K requirements recommended by soil test results. WDOT Seed Mixture No. 1 (Kentucky Bluegrass 45%, Creeping Red Fescue 35%, Perennial Rye Grass 5%, and White Clover 15%) will be sown at a rate of 150 lbs/acre on all disturbed areas. All seeded areas will be mulched using straw/hay or else hydromulched using a manufactured biodegradable recycled paper mulch. Replanting shall be done as necessary to produce a uniform stand of grass.





PROPOSED LINK CLAY BORROW SITE

LOCATION MAP

SCALE 1" = 2 MILES

▲▲ = PROPOSED TRUCK ROUTE

NORTH

PLAN SHEET 1



# PROPOSED LINK CLAY BORROW SITE ISOPACH MAP

APPROXIMATE PROPERTY BOUNDARY

APPROXIMATE CLAY EXCAVATION BOUNDARY

SILT FENCE OR BERM

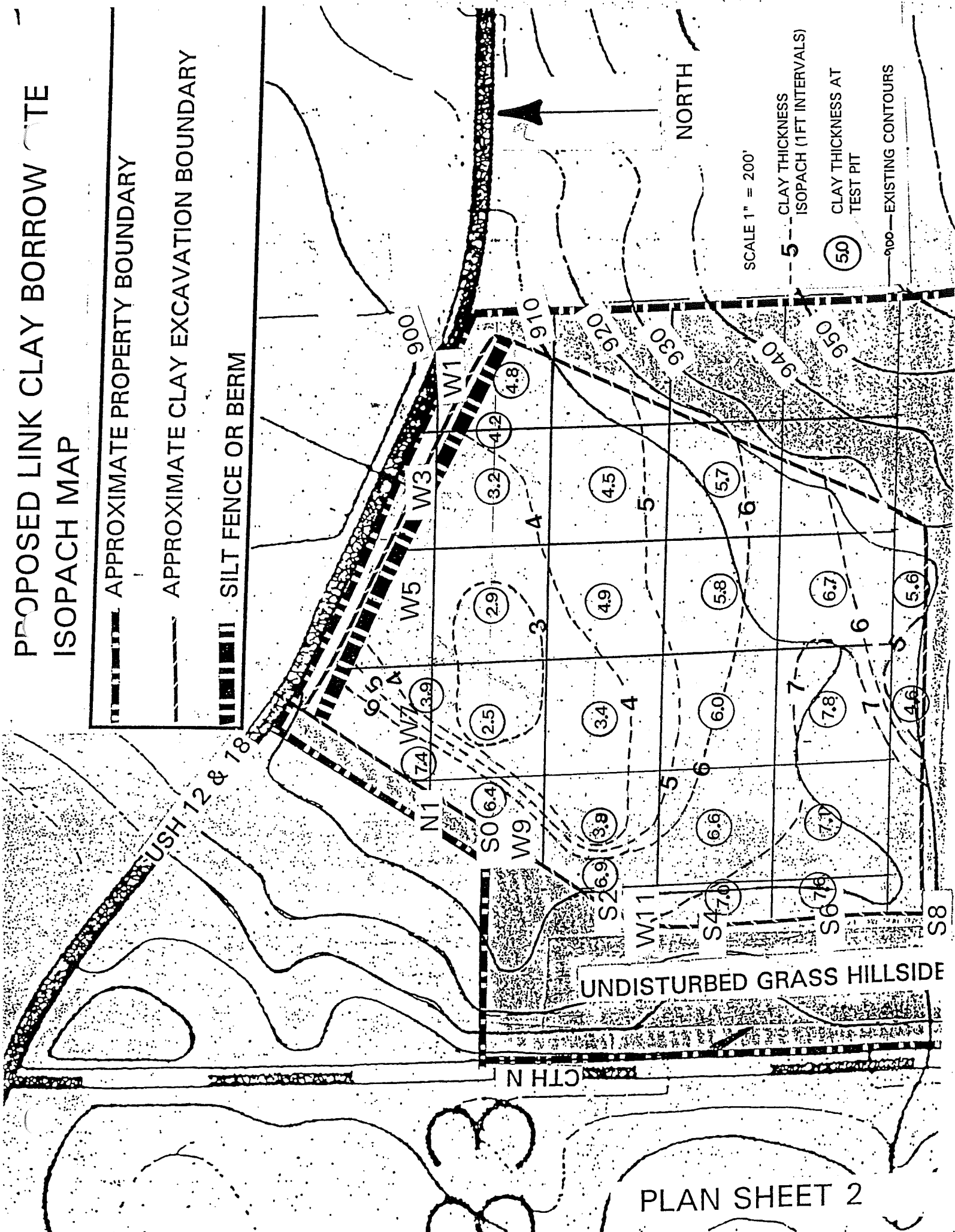
NORTH

SCALE 1" = 200'

5 CLAY THICKNESS  
ISOPACH (1FT INTERVALS)

50 CLAY THICKNESS AT  
TEST PIT

900 EXISTING CONTOURS





# PROPOSED LINK CLAY BORROW SITE SOIL TESTING LOCATIONS

APPROXIMATE PROPERTY BOUNDARY

APPROXIMATE CLAY EXCAVATION BOUNDARY

SILT FENCE OR BERM

SCALE 1" = 200'

GRAIN SIZE /  
ATTERBERG LIMITS

MOISTURE DENSITY

COMPACTION /  
HYDRAULIC CONDUCTIVITY

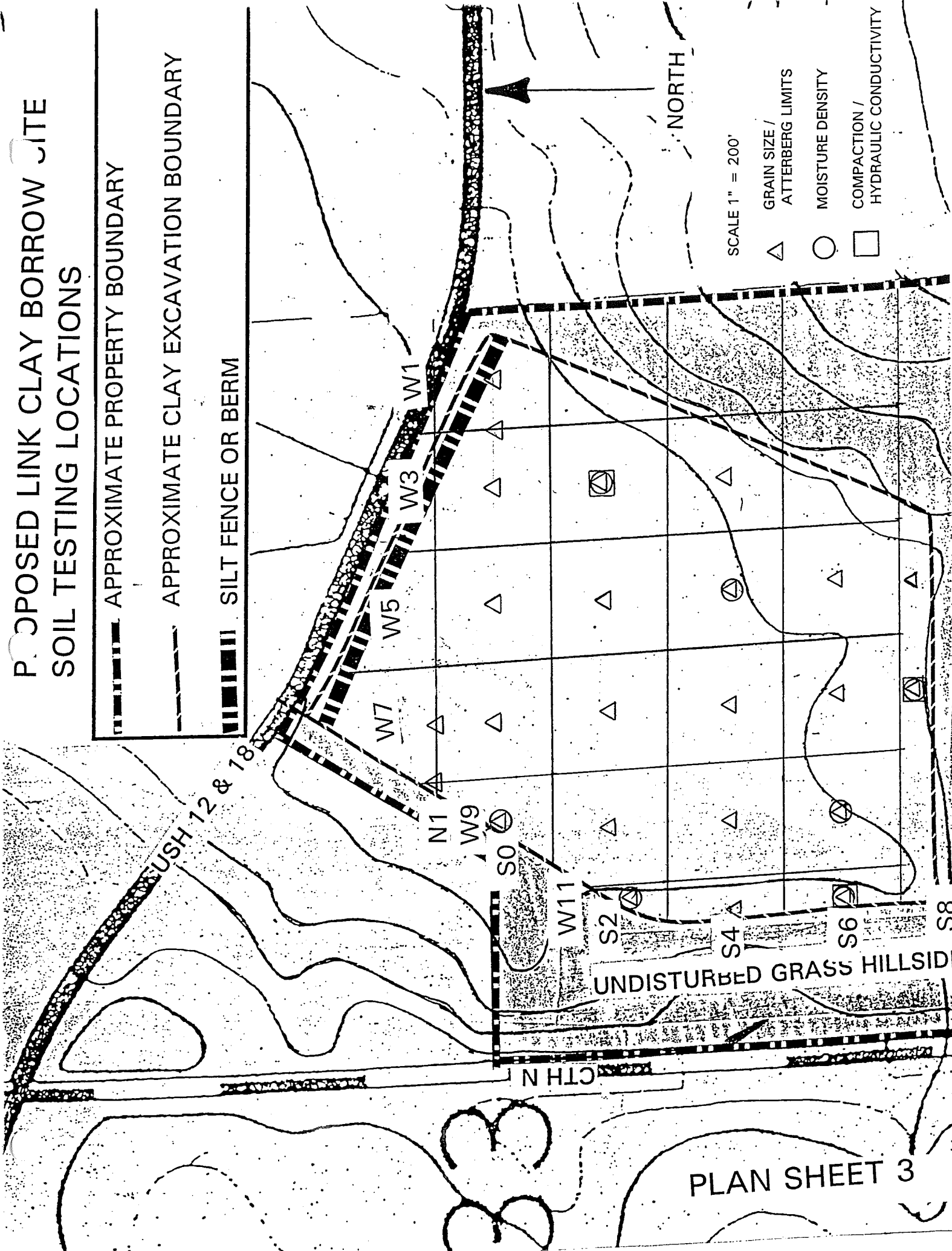
NORTH

USH 12 & 18

UNDISTURBED GRASS HILLSIDE

CTH N

PLAN SHEET 3





## APPENDIX A



ASHCO, INC.

---

P.O. BOX 372  
WAUSAU, WI 54402-0372

June 19, 1995

Mr. Al Czecholinski  
Dane County Public Works Department  
115 West Doty Street  
Room 2144  
Madison, WI 53703-3202

Dear Al:

Enclosed are the results of the seven (7) Modified Proctors you ordered.  
We faxed the information on June 19, 1995.

If you have any questions, please call us at 715-848-3557. We appreciate  
the opportunity to assist you with this project.

Sincerely,  
ASHCO, Inc.

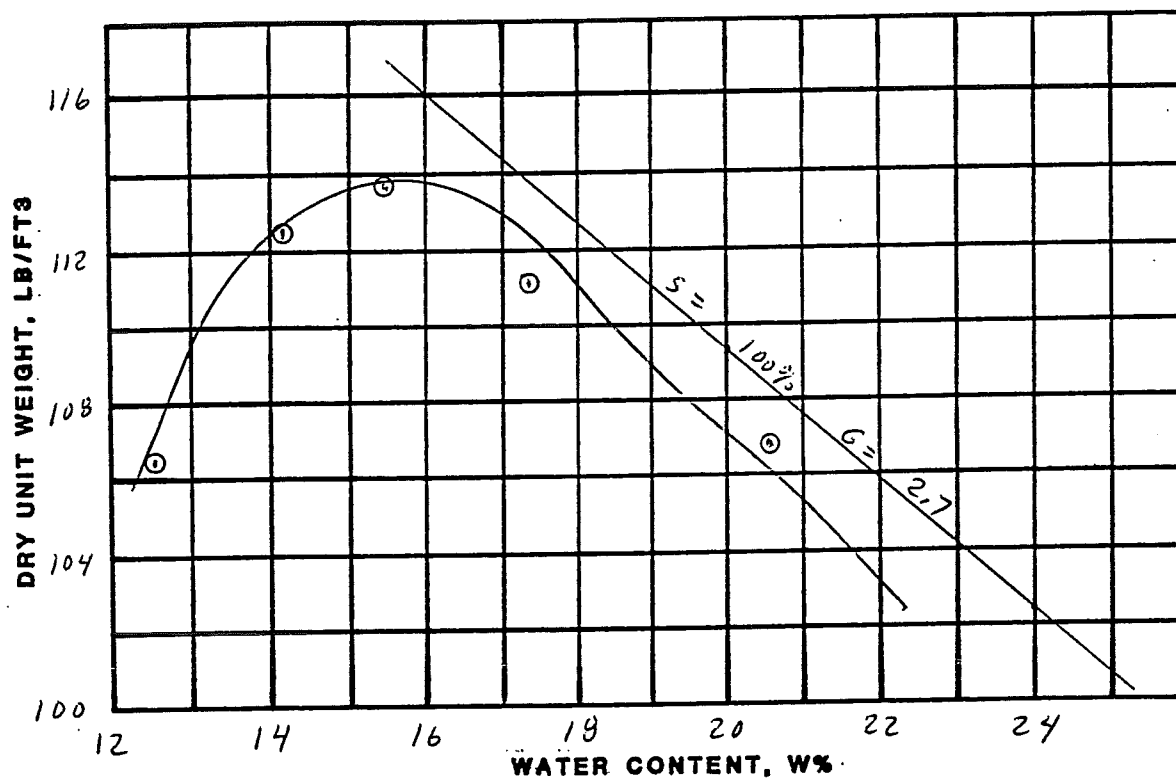


Douglas L. Weinkauff, P. E.  
President

cc: File #9510



DANE COUNTY  
MODIFIED PROCTOR  
LINK BORROW PIT (Additional)  
SAMPLE #1

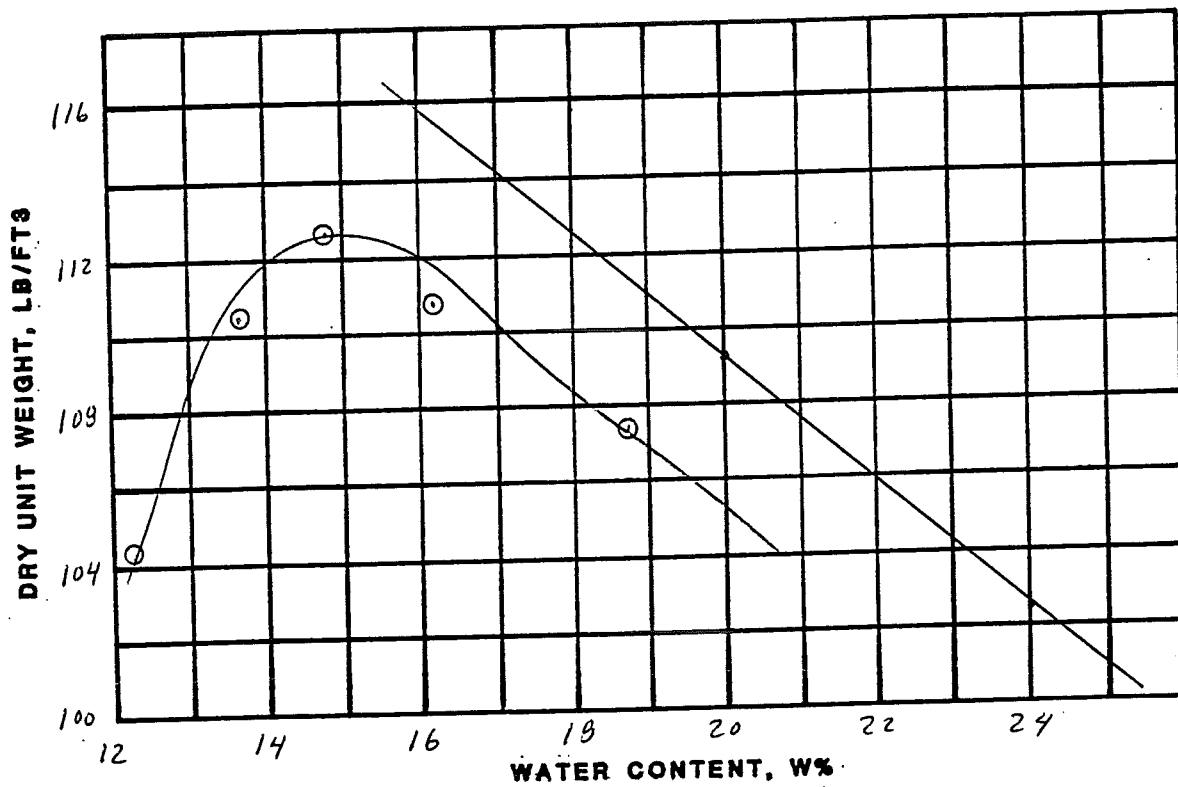


OPTIMUM MOISTURE = 15.6 %  
MAXIMUM DRY UNIT WEIGHT = 113.9 lbs / cft



ASHCO INC.

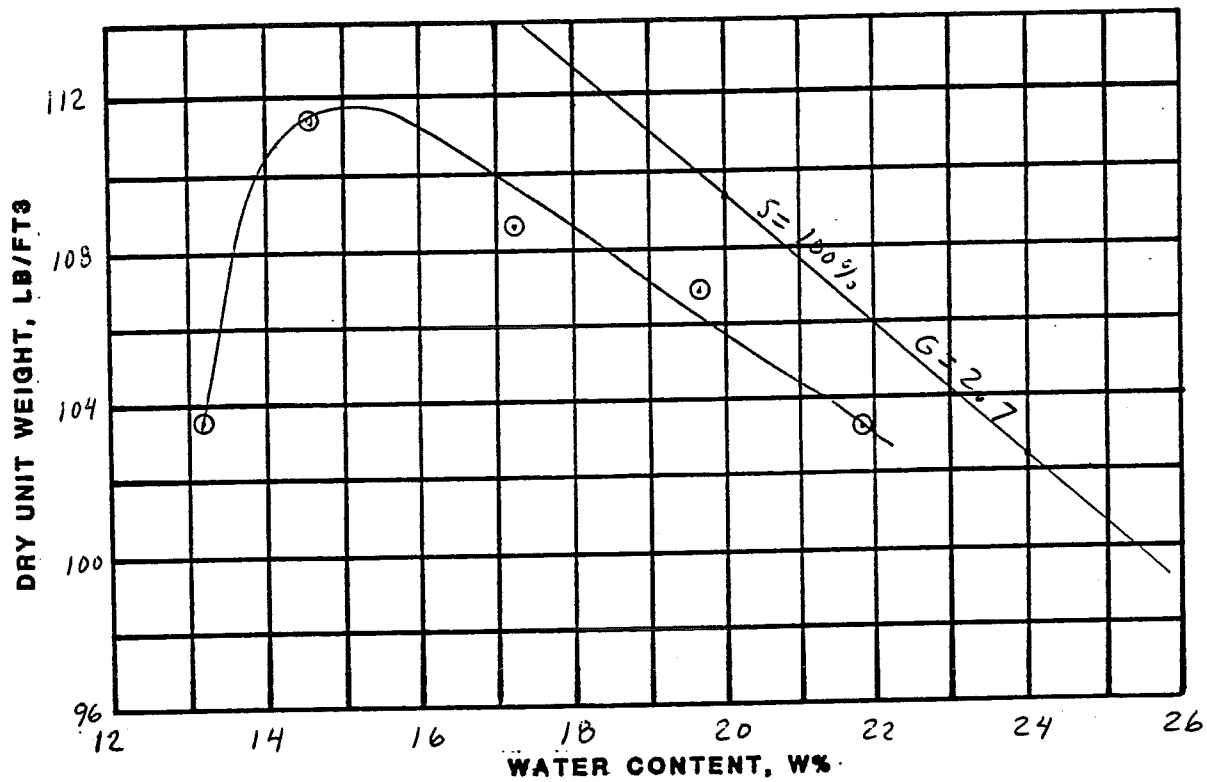
DANE COUNTY  
MODIFIED PROCTOR  
LINK BORROW PIT (Additional)  
SAMPLE #2



OPTIMUM MOISTURE = 14.8 %  
MAXIMUM DRY UNIT WEIGHT = 112.6 lbs/cft



DANE COUNTY  
MODIFIED PROCTOR  
LINK BORROW PIT (Additional)  
SAMPLE #3

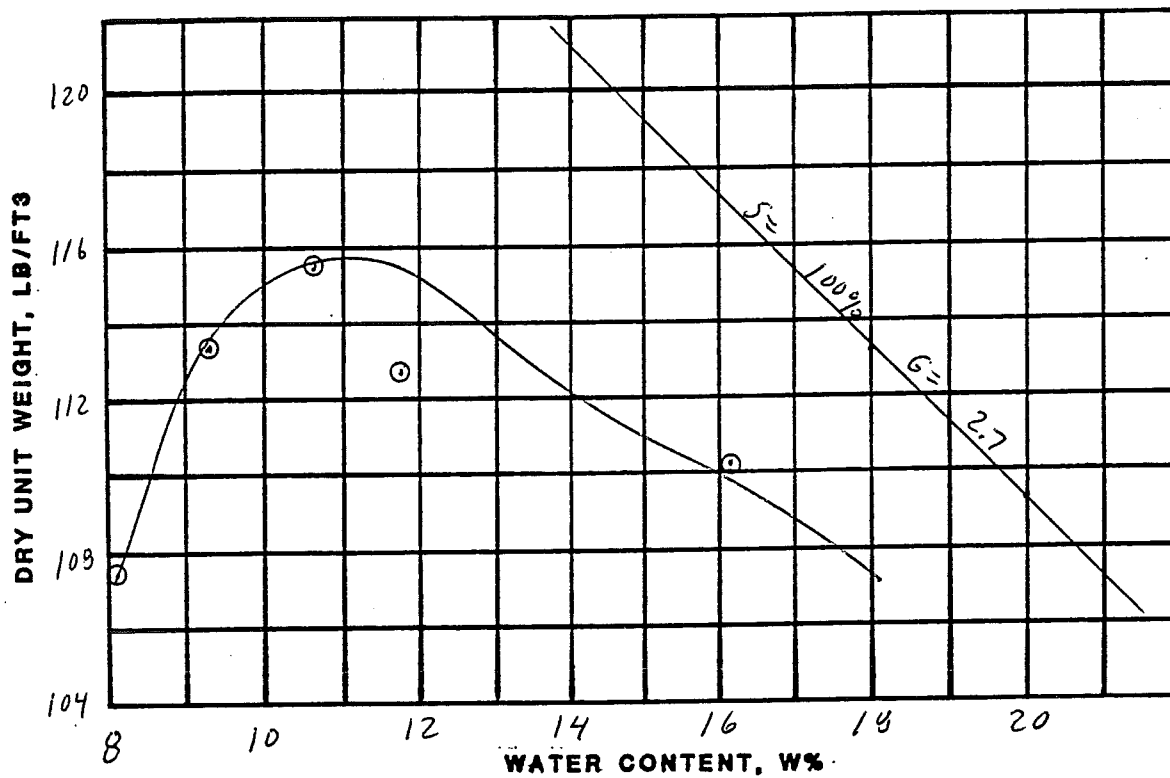


OPTIMUM MOISTURE = 15 %  
MAXIMUM DRY UNIT WEIGHT = 111.9 lbs / cft



ASHCO INC.

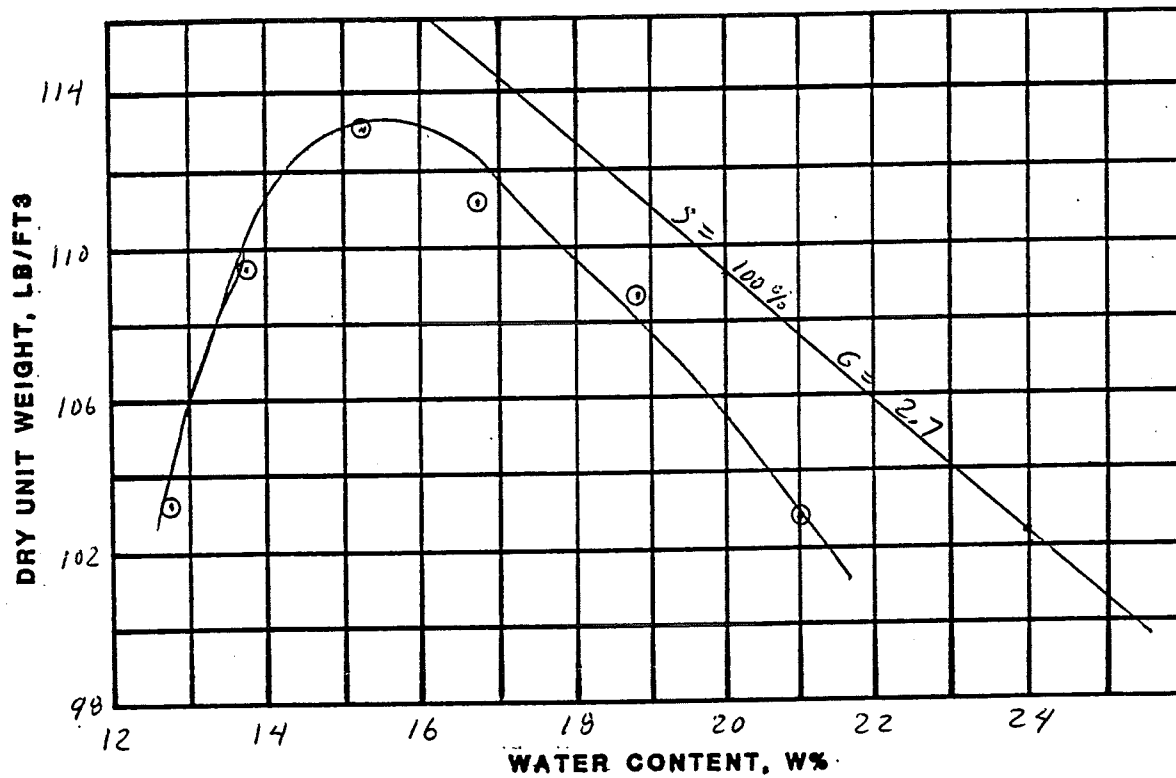
DANE COUNTY  
MODIFIED PROCTOR  
LINK BORROW PIT (Additional)  
SAMPLE #4



OPTIMUM MOISTURE 12 %  
MAXIMUM DRY UNIT WEIGHT = 115.9 lb/cft



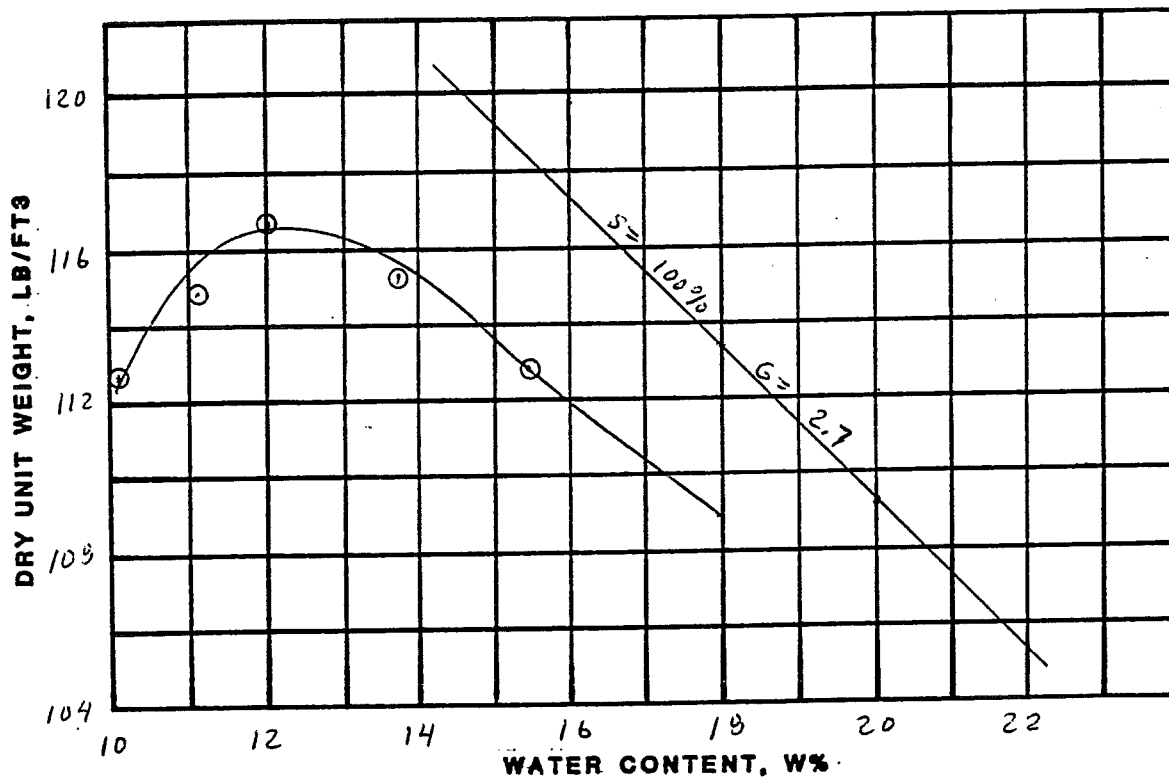
DANE COUNTY  
MODIFIED PROCTOR  
LINK BORROW PIT (Additional)  
SAMPLE #5



OPTIMUM MOISTURE = 15.5 %  
MAXIMUM DRY UNIT WEIGHT = 113.2 lbs/cft



DANE COUNTY  
MODIFIED PROCTOR  
LINK BORROW PIT (Additional)  
SAMPLE #6

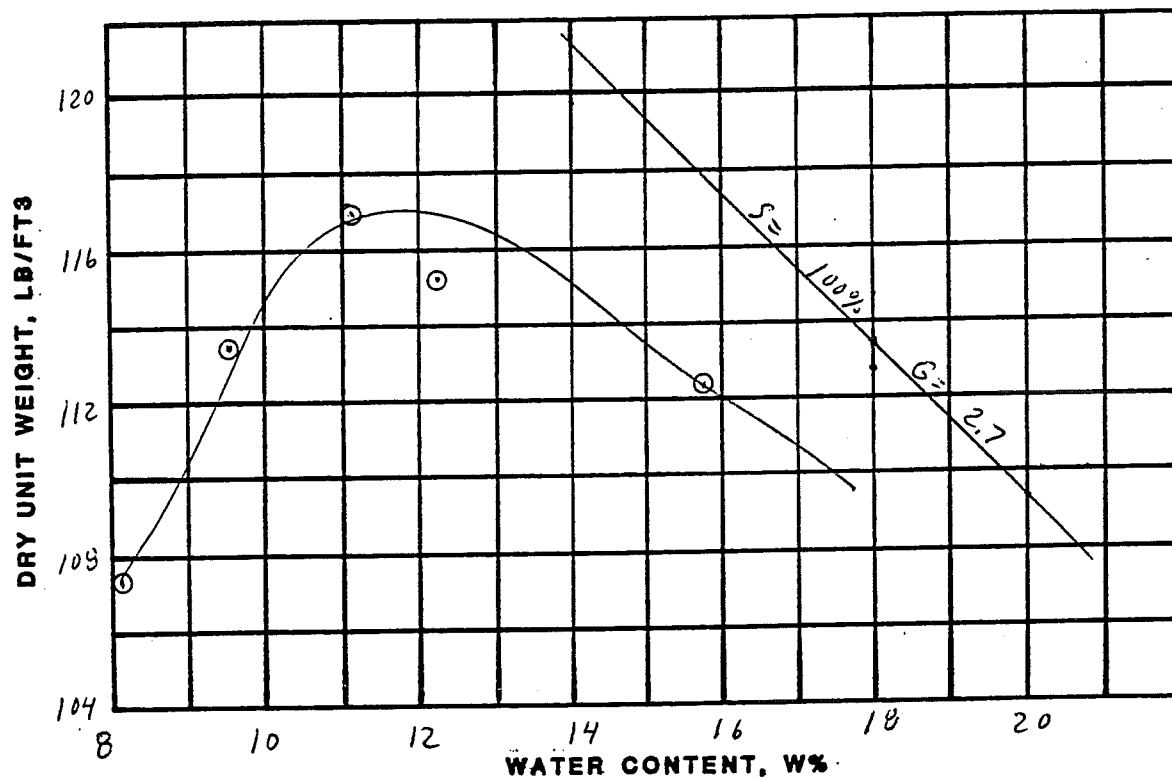


OPTIMUM MOISTURE = 12 %  
MAXIMUM DRY UNIT WEIGHT = 116.9 lb/cft



ASHCO INC.

DANE COUNTY  
MODIFIED PROCTOR  
LINK BORROW PIT (Additional)  
SAMPLE #7

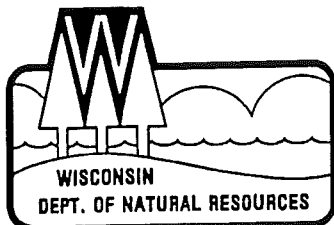


OPTIMUM MOISTURE 11.8 %  
MAXIMUM DRY UNIT WEIGHT = 117.1 lb/cft



## APPENDIX B





George E. Meyer  
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

Southern District Headquarters  
3911 Fish Hatchery Road  
Fitchburg, Wisconsin 53711  
TELEPHONE 608-275-3266  
TELEFAX 608-275-3338

December 6, 1994

File Ref: FID#113127300  
Dane Co./SW/Inspection

Mr. Allan Czecholinski, Hydrogeologist  
Dane County Dept. of Public Works  
115 West Doty St., Room 2144  
Madison, WI 53703

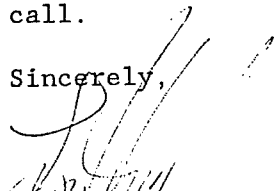
SUBJECT: Initial Site Inspection of Alternate Clay Borrow Site

Dear Mr. Czecholinski:

On Thursday, December 1, 1994, Dave Carper (WDNR) and I inspected a proposed clay borrow site located in the SW $\frac{1}{4}$  of the NE $\frac{1}{4}$  of Section 33, Town of Cottage Grove Dane County, for compliance with Chapter NR 500, Wisconsin Administrative Code, Solid Waste Management. As a result of that inspection, it appeared that this borrow site would comply with the requirements of ch. NR 500, Wis. Adm. Code.

If you have any questions concerning this letter, please feel free to write or call.

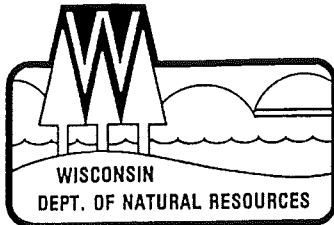
Sincerely,

  
Lynn Hummel

Solid and Hazardous Waste Investigator  
Telephone: (608) 275-3213

LH:lh  
A\DCLF.CBS





George E. Meyer  
Secretary

State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

101 South Webster Street  
Box 7921  
Madison, Wisconsin 53707  
TELEPHONE 608-266-2621  
TELEFAX 608-267-3579  
TDD 608-267-6897

December 20, 1994

IN REPLY REFER TO: 1650

Mr. Allan Czecholinski  
Dane County Public Works Department  
115 West Doty Street, Room 2144  
Madison, WI 53703

SUBJECT: Endangered Resources Information Review (Log Number 94-359)

Dear Mr. Czecholinski:

The Bureau of Endangered Resources has reviewed the project area described in your letter of November 28, 1994 for the proposed removal of clay soils in the Town of Cottage Grove. The clay is needed to construct a liner for a new Phase at the Dane County Rodefild Landfill.

Our Natural Heritage Inventory (NHI) data files contain no occurrence records of Endangered, Threatened, or Special Concern species or natural communities, nor of any State Natural Areas that I believe would be impacted by the project as currently proposed. The clay soil removal is proposed to be located in T7N R11E Section 33, Dane County.

Although there are no records in the NHI database of endangered resources occurring at the project site, comprehensive endangered resource surveys have not been completed for the project area. As a result, our data files may be incomplete. However, given your description of the project site and the nature of the proposed project I do not believe that further surveys are warranted.

This letter is for informational purposes and only addresses endangered resource issues. This letter does not constitute Department of Natural Resources authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the Department.

Please contact John Pohlman at (608) 264-6263 if you have any questions about this information.

Sincerely,

*Charles M. Pils*

Charles M. Pils  
Director, Bureau of Endangered Resources

cc: Bob Roden - EA/6  
Harold Meier - SD  
Carl Batha - SD  
Dave Carper - SW/3

jdp:CMF/[erir.sw]swcbctgr.12





## State Historical Society of Wisconsin

Division of Historic Preservation

816 State Street • Madison, Wisconsin 53706-1488

☎ (608) 264-6500 • FAX (608) 264-6404

December 29, 1994

Mr. Allan Czecholinski  
Department of Public Works  
115 West Doty Street, Room #2144  
Madison, Wisconsin 53703

**IN REPLY PLEASE REFER TO SHSW: #94-1783/DA**  
RE: Proposed Clay Borrow Site for Rodefild Landfill

Dear Mr. Czecholinski:

We have searched our records for properties of architectural, historical or archeological significance in the referenced project area in accordance with Wis. Stat. §44.40 (1991).

We believe the project as described in your correspondence will not affect any structures that are listed in the State or National Registers, the Wisconsin Inventory of Historic Places, or on a list of locally designated historic places.

Site #BDA-237, (Mary Black Burial Site) is located on top of a hill, identified by a monument surrounded by a stone fence. Enclosed for your information please find a copy of your project area map showing the location of the burial site. We request, therefore, that the project area be surveyed by a qualified archeologist to locate and to mark its boundaries to ensure that the site is not affected by the proposed project.

Please provide this office with a copy of the archeologist's report indicating that the above survey and identification have been carried out. Please ensure that the archeologist's report is accompanied by our project identification number (**SHSW# 94-1783/DA**).

With any questions, please contact me at (608) 264-6508. Thank you for your attention to this matter.

Sincerely,

Chip Harry L. Brown III, J.D.  
State Compliance Coordinator

CHLB:lks

Enclosure

cc: Stan Druckenmiller, DNR





Division of Historic Preservation

State Historical Society of Wisconsin

816 State Street • Madison, Wisconsin 53706-1488  
☎ (608) 264-6500 • FAX (608) 264-6404

January 17, 1995

Mr. Allan Czecholinski  
Department of Public Works  
115 West Doty Street, Room #2133  
Madison, Wisconsin 53703

IN REPLY PLEASE REFER TO SHSW: #94-1783/DA  
RE: Proposed Clay Borrow Site For Rodefild Landfill

Dear Mr. Czecholinski:

We have reviewed your plan for protecting the Mary Black Burial Site (#BDA-237) during clay excavation, as outlined in your letter of January 4, 1995. We are satisfied that the clay borrow project will not affect the burial. Therefore no further actions are necessary to document compliance with Wisconsin's historic preservation laws.

If any federal funds, licenses, or permits will be involved in this undertaking, please contact us immediately for compliance with federal preservation laws, which are significantly different from state laws in scope and requirements.

Should you have any questions, please contact me at (608) 264-6508. Thank you for your attention to this matter.

Sincerely,

Chip Harry L. Brown III, J.D.  
State Compliance Coordinator

CHLB:lks

cc: Stan Druckenmiller, DNR





State of Wisconsin

Department of Agriculture, Trade and Consumer Protection

Alan T. Tracy, Secretary

801 West Badger Road • PO Box 8911  
Madison, WI 53708-8911

January 6, 1994

Allan Czecholinski  
Solid Waste Engineer/Hydrogeologist  
Dane County Public Works  
217 South Hamilton Street, Suite 400  
Madison, WI 53703

Dear Mr. Czecholinski:

Re: Proposed Clay Extraction Site  
Kervyn and Helen Link Property  
Town of Cottage Grove, Dane County

The Department of Agriculture, Trade, and Consumer Protection (DATCP) has reviewed the notification and any supplemental information you have provided concerning the potential need for an agricultural impact statement (AIS) for the above project. We have determined that an AIS **will not** be prepared for this project.

Please note that if the proposed project or project specifications are altered in any way which could be construed as increasing the potential adverse effects of the project on agriculture or on any farm operation, the DATCP should be renotified. Questions on the AIS program can be directed to me at the above address or by dialing 608/273-6419.

Sincerely,

Peter Nauth  
Agricultural Impact Program



ASHCO INC.

P.O. BOX 372  
WAUSAU, WI 54402-0372

February 23, 1995

Mr. Al Czecholinski  
Dane County Public Works Department  
115 West Doty Street  
Room 2144  
Madison, WI 53703-3202

Dear Mr. Czecholinski

Enclosed is the testing results for the Link Property Borrow Site. The grain size analyses were conducted in accordance with ASTM D422-63 (Reapproved 1990). The Modified Proctor analyses were done in accordance with ASTM D1557-91 Procedure A. The Atterberg Limits were done in accordance with ASTM D4318-93. The permeability testing was conducted using the falling head test.

We appreciate the opportunity to assist you with this project. If you have any questions, please call me at 715-848-3557.

Sincerely,  
ASHCO, Inc.



Douglas L. Weinkauff, P. E.  
President



TABLE 1 NATURAL MOISTURE AND ATTERBERG LIMITS

| <u>Coordinates</u>       | <u>Natural<br/>Moisture Content (%)</u> | <u>Liquid<br/>Limit</u> | <u>Plastic<br/>Limit</u> | <u>Plasticity<br/>Index</u> | <u>USCS<br/>Classification</u> |
|--------------------------|---|-------------------------|--------------------------|-----------------------------|--------------------------------|
| N1,W 7 #1                | 30.4                                    | 48                      | 16                       | 32                          | CL                             |
| N1,W 7 #2                | 34.6                                    | 38                      | 21                       | 17                          | CL                             |
| N1,W 8 #1                | 28.8                                    | 47                      | 25                       | 22                          | CL                             |
| N1,W 8 #2                | 23.6                                    | 42                      | 18                       | 24                          | CL                             |
| S0,W 1 #1                | 26.1                                    | 46                      | 21                       | 25                          | CL                             |
| S0,W 1 #2                | 23.3                                    | 47                      | 19                       | 28                          | CL                             |
| S0,W 2 #1                | 27.8                                    | 39                      | 18                       | 21                          | CL                             |
| S0,W 2 #2                | 21.2                                    | 29                      | 19                       | 10                          | CL                             |
| S0,W 3 #1                | 28                                      | 50                      | 19                       | 31                          | CL/CH                          |
| S0,W 3 #2                | 23.7                                    | 34                      | 19                       | 15                          | CL                             |
| S0,W 5 #1                | 28.9                                    | 47                      | 18                       | 29                          | CL                             |
| S0,W 5 #2                | 26.5                                    | 35                      | 21                       | 14                          | CL                             |
| S0,W 7 #1                | 32.8                                    | 66                      | 19                       | 47                          | CH                             |
| S0,W 7 #2                | 27.5                                    | 44                      | 19                       | 25                          | CL                             |
| S0,W 9 #1 (Proctor)      | 24.7                                    | 52                      | 22                       | 30                          | CH                             |
| S0,W 9 #2                | 28.5                                    | 41                      | 18                       | 23                          | CL                             |
| S2,W 3 #1 (Proctor/Perm) | 22.6                                    | 44                      | 16                       | 28                          | CL                             |
| S2,W 3 #2                | 22.2                                    | 36                      | 20                       | 16                          | CL                             |
| S2,W 5 #1                | 28.4                                    | 38                      | 19                       | 19                          | CL                             |
| S2,W 5 #2                | 25.0                                    | 51                      | 19                       | 32                          | CH                             |
| S2,W 7 #1                | 28.4                                    | 52                      | 22                       | 30                          | CH                             |
| S2,W 7 #2                | 29.0                                    | 48                      | 15                       | 33                          | CL                             |
| S2,W 9 #1                | 27.9                                    | 55                      | 18                       | 37                          | CH                             |
| S2,W 9 #2                | 30.0                                    | 44                      | 18                       | 26                          | CL                             |
| S2,W11 #1 (Proctor)      | 24.9                                    | 45                      | 20                       | 25                          | CL                             |
| S2,W11 #2                | 27.8                                    | 50                      | 16                       | 34                          | CL/CH                          |
| S4,W 3 #1                | 26.0                                    | 38                      | 18                       | 20                          | CL                             |
| S4,W 3 #2                | 24.4                                    | 32                      | 16                       | 16                          | CL                             |
| S4,W 5 #1 (Proctor)      | 29.3                                    | 47                      | 18                       | 29                          | CL                             |



ASHCO, INC.

|        |                   |      |    |    |    |    |
|--------|-------------------|------|----|----|----|----|
| S4,W 5 | #2                | 27.1 | 39 | 19 | 20 | CL |
| S4,W 7 | #1                | 26.5 | 45 | 20 | 25 | CL |
| S4,W 7 | #2                | 29.2 | 47 | 19 | 28 | CL |
| S4,W 9 | #1                | 29.7 | 51 | 20 | 31 | CH |
| S4,W 9 | #2                | 31.0 | 40 | 17 | 23 | CL |
| S4,W11 | #1                | 28.0 | 53 | 17 | 36 | CH |
| S4,W11 | #2                | 26.9 | 40 | 20 | 20 | CL |
| S6,W 5 | #1                | 23.8 | 47 | 23 | 24 | CL |
| S6,W 5 | #2                | 25.0 | 44 | 17 | 27 | CL |
| S6,W 7 | #1                | 26.4 | 51 | 20 | 31 | CH |
| S6,W 7 | #2                | 23.9 | 35 | 20 | 15 | CL |
| S6,W 9 | #1 (Proctor)      | 27.0 | 47 | 20 | 27 | CL |
| S6,W 9 | #2                | 27.8 | 39 | 17 | 22 | CL |
| S6,W11 | #1 (Proctor/Perm) | 25.7 | 51 | 18 | 33 | CH |
| S6,W11 | #2                | 27.4 | 37 | 16 | 21 | CL |
| S8,W 7 | #1 (Proctor/Perm) | 24.4 | 42 | 18 | 24 | CL |
| S8,W 7 | #2                | 24.1 | 51 | 18 | 33 | CH |
| S8,W 5 | #1                | 25.4 | 52 | 23 | 29 | CH |
| S8,W 5 | #2                | 21.8 | 42 | 18 | 24 | CL |



TABLE 2 PROCTOR, PERMEABILITY  
DATA SUMMARY

| <u>% Moisture</u> | <u>Dry Density (lb/cft)</u> | <u>Permeability (cm/sec)</u> |
|-------------------|-----------------------------|------------------------------|
| S2 W3 #1          |                             |                              |
| 16.4              | 105.3                       | $6.9 \times 10^{-8}$         |
| 17.3              | 108.3                       | $1.0 \times 10^{-9}$         |
| 19.6              | 106.6                       | $1.5 \times 10^{-9}$         |
| 23.0              | 100.9                       | $1.1 \times 10^{-9}$         |
| 25.7              | 99.9                        | $4.3 \times 10^{-9}$         |
| S6 W11 #1         |                             |                              |
| 13.0              | 99.8                        | $2.2 \times 10^{-8}$         |
| 16.3              | 104.7                       | $4.7 \times 10^{-9}$         |
| 18.0              | 105.7                       | $2.6 \times 10^{-9}$         |
| 21.2              | 104.7                       | $3.1 \times 10^{-9}$         |
| 24.5              | 96.7                        | $2.2 \times 10^{-9}$         |
| S8 W7 #1          |                             |                              |
| 12.0              | 111.7                       | $1.9 \times 10^{-8}$         |
| 14.2              | 114.9                       | $4.1 \times 10^{-9}$         |
| 16.6              | 112.3                       | $3.3 \times 10^{-9}$         |
| 17.9              | 111.4                       | $3.1 \times 10^{-9}$         |
| 22.6              | 101.2                       | $5.0 \times 10^{-9}$         |

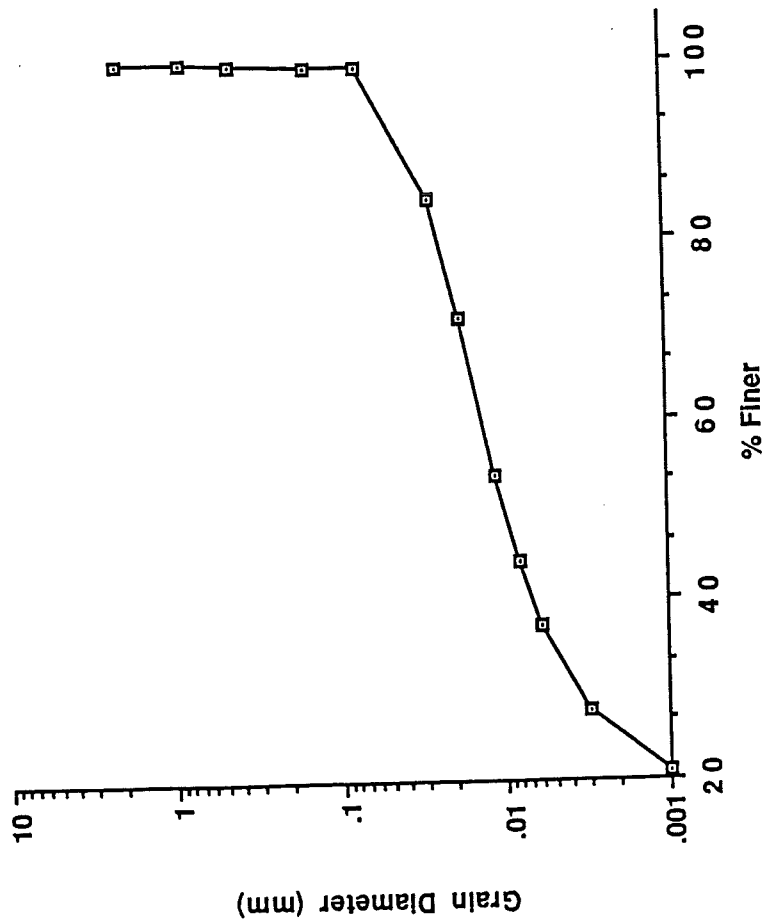


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 N1 W7  
Test Date: 1/23/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.8           |
| 0.420                      | 99.6           |
| 0.150                      | 99.5           |
| 0.075                      | 99.4           |
| 0.027                      | 84.5           |
| 0.018                      | 71.1           |
| 0.011                      | 53.7           |
| 0.008                      | 44.3           |
| 0.006                      | 37.3           |
| 0.003                      | 27.6           |
| 0.001                      | 20.8           |



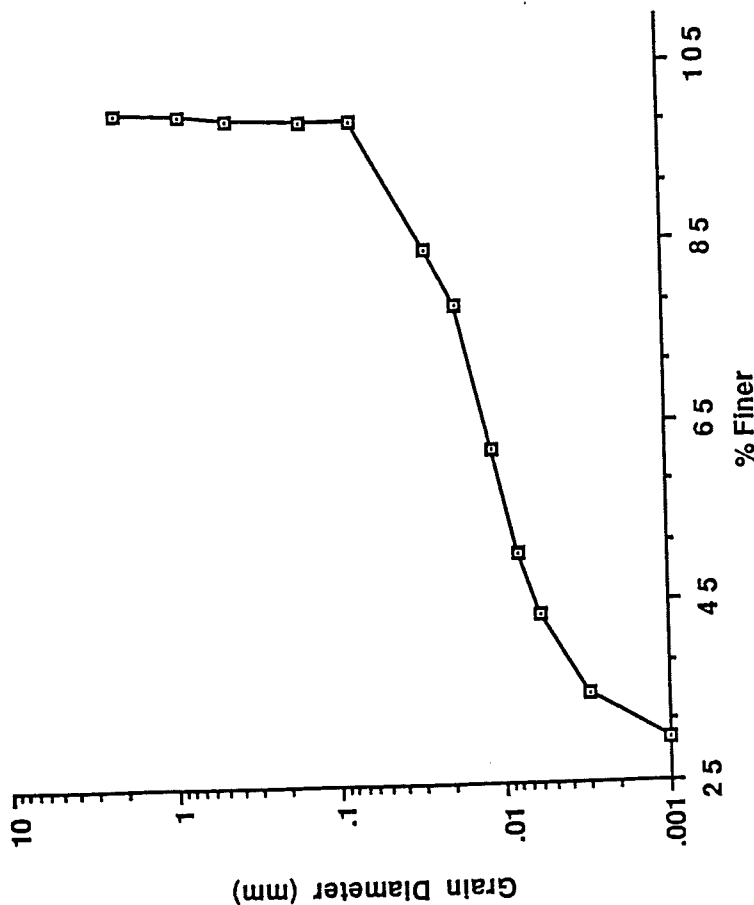


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 N1 W7  
Test Date: 1/31/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.6           |
| 0.420                      | 98.9           |
| 0.150                      | 98.7           |
| 0.075                      | 98.6           |
| 0.027                      | 84.2           |
| 0.018                      | 78.0           |
| 0.011                      | 62.1           |
| 0.008                      | 50.6           |
| 0.006                      | 43.7           |
| 0.003                      | 34.7           |
| 0.001                      | 29.7           |



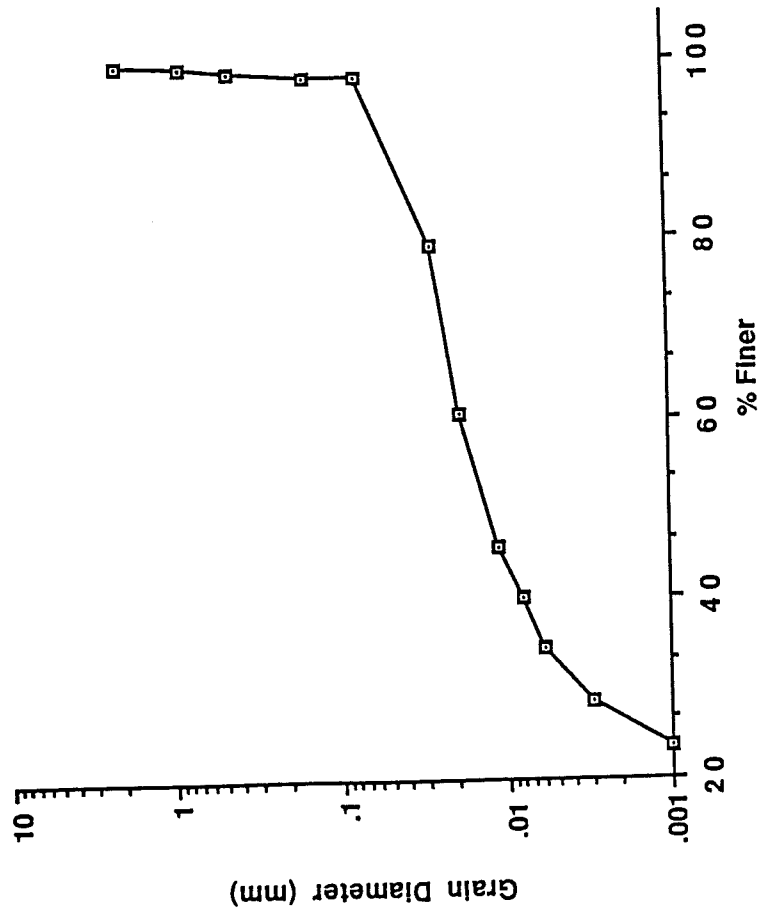


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 N1 W8  
Test Date: 1/18/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.5           |
| 0.420                      | 98.8           |
| 0.150                      | 98.3           |
| 0.075                      | 98.2           |
| 0.027                      | 79.2           |
| 0.019                      | 60.7           |
| 0.011                      | 45.8           |
| 0.008                      | 40.2           |
| 0.006                      | 34.5           |
| 0.003                      | 28.6           |
| 0.001                      | 23.7           |



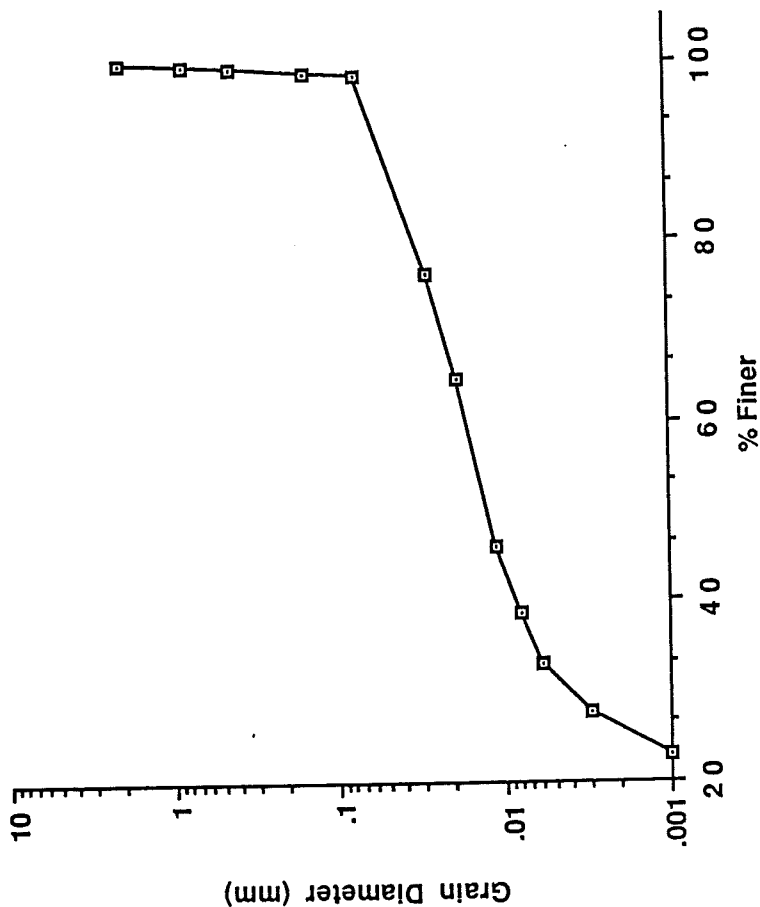


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 N1 W8  
Test Date: 1/25/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 99.7    |
| 0.420               | 99.4    |
| 0.150               | 98.7    |
| 0.075               | 98.6    |
| 0.028               | 76.4    |
| 0.019               | 64.6    |
| 0.011               | 46.1    |
| 0.008               | 38.8    |
| 0.006               | 32.9    |
| 0.003               | 27.8    |
| 0.001               | 22.9    |



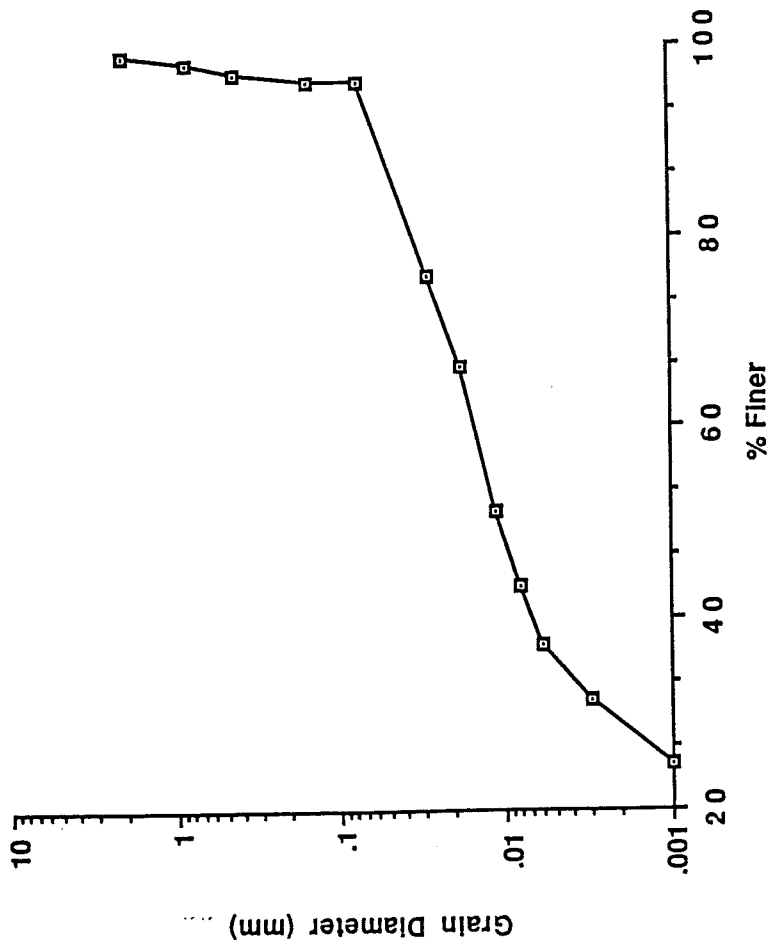


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W1  
Test Date: 1/18/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 98.8           |
| 0.840                      | 98.2           |
| 0.420                      | 96.9           |
| 0.150                      | 96.2           |
| 0.075                      | 96.1           |
| 0.028                      | 75.7           |
| 0.018                      | 66.4           |
| 0.011                      | 51.2           |
| 0.008                      | 43.3           |
| 0.006                      | 37.3           |
| 0.003                      | 31.5           |
| 0.001                      | 24.6           |



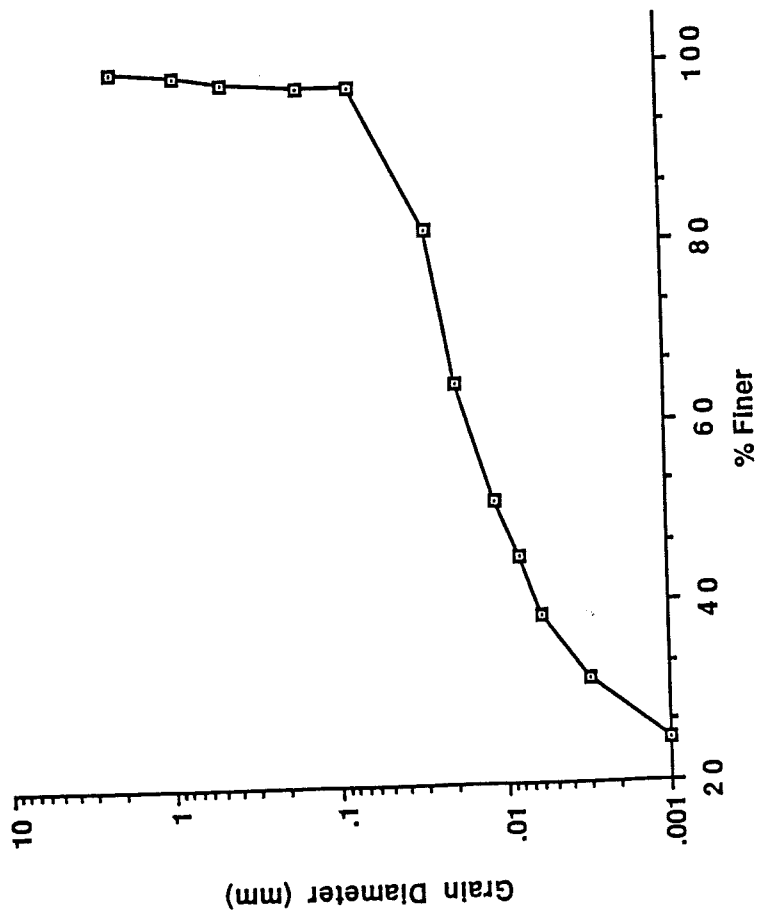


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W1  
Test Date: 1/24/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.6           |
| 0.840                      | 99.0           |
| 0.420                      | 98.1           |
| 0.150                      | 97.6           |
| 0.075                      | 97.5           |
| 0.027                      | 81.7           |
| 0.019                      | 64.4           |
| 0.011                      | 51.3           |
| 0.008                      | 45.2           |
| 0.006                      | 38.8           |
| 0.003                      | 31.5           |
| 0.001                      | 24.8           |



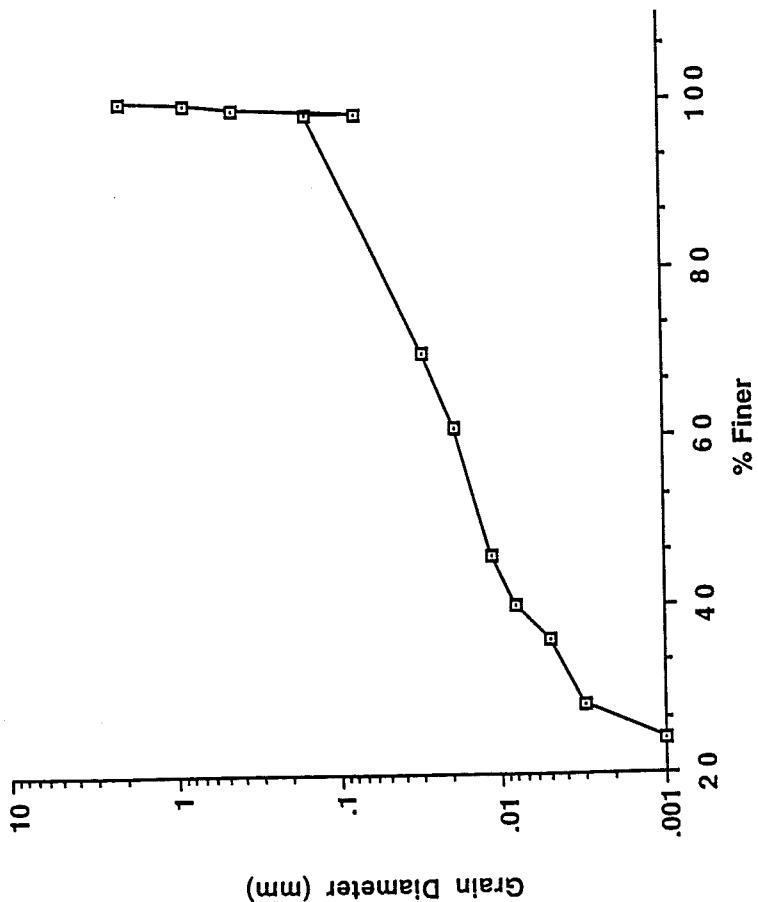


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W2  
Test Date: 1/17/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.7           |
| 0.420                      | 98.9           |
| 0.150                      | 98.5           |
| 0.075                      | 98.5           |
| 0.029                      | 70.0           |
| 0.019                      | 61.0           |
| 0.011                      | 46.0           |
| 0.008                      | 40.0           |
| 0.006                      | 36.0           |
| 0.003                      | 28.0           |
| 0.001                      | 24.0           |



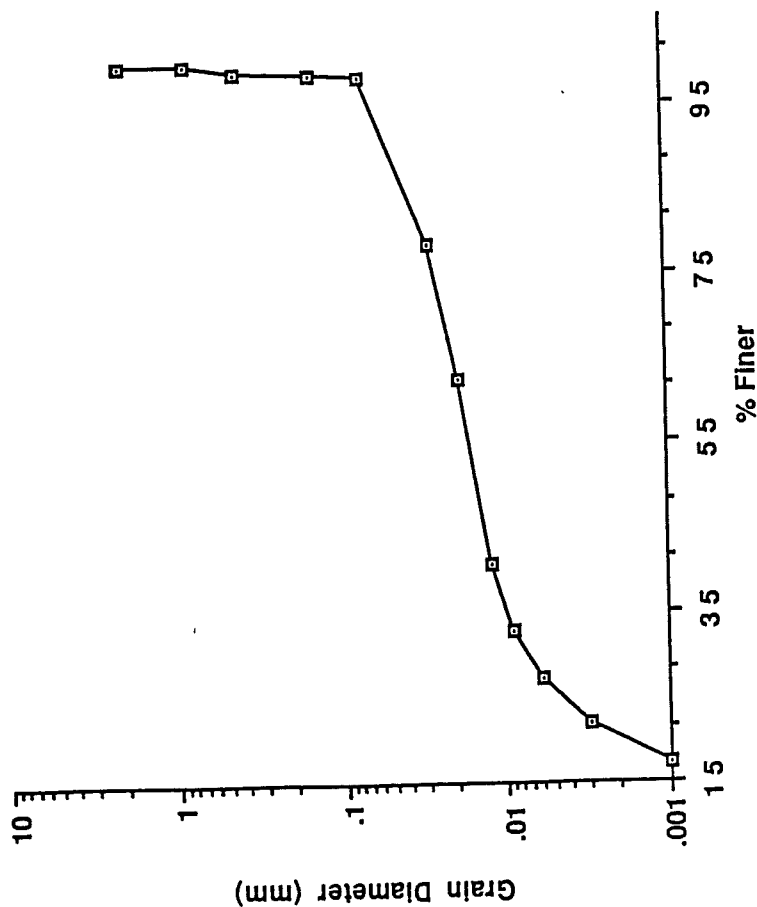


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W2  
Test Date: 1/25/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.7           |
| 0.420                      | 98.8           |
| 0.150                      | 98.3           |
| 0.075                      | 98.2           |
| 0.028                      | 78.3           |
| 0.019                      | 62.3           |
| 0.012                      | 40.6           |
| 0.009                      | 32.9           |
| 0.006                      | 27.3           |
| 0.003                      | 21.8           |
| 0.001                      | 17.3           |



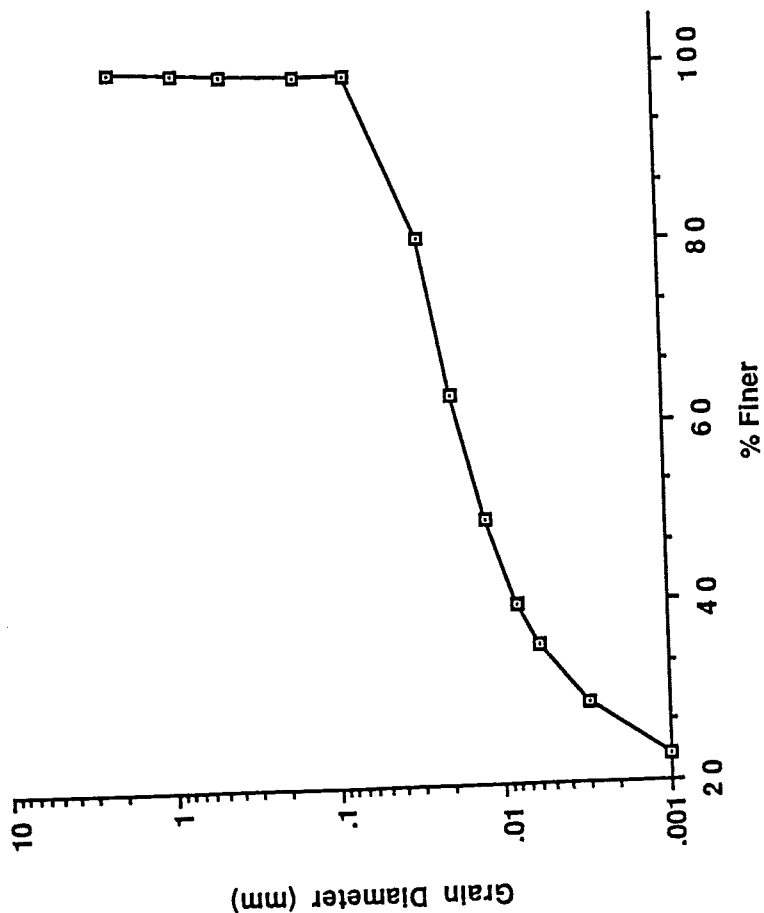


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W3  
Test Date: 1/24/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 99.8    |
| 0.420               | 99.3    |
| 0.150               | 99.1    |
| 0.075               | 99.0    |
| 0.028               | 80.8    |
| 0.019               | 63.1    |
| 0.012               | 49.4    |
| 0.008               | 39.9    |
| 0.006               | 35.5    |
| 0.003               | 28.9    |
| 0.001               | 22.9    |



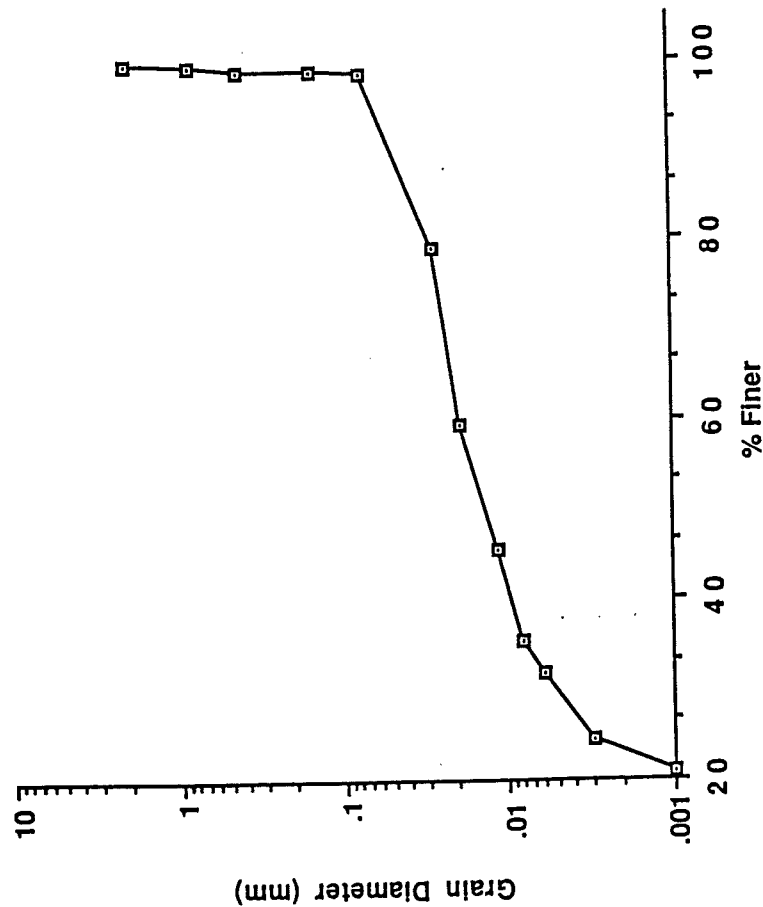


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W3  
Test Date: 1/19/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.4    |
| 0.420               | 98.8    |
| 0.150               | 98.7    |
| 0.075               | 98.6    |
| 0.027               | 78.9    |
| 0.019               | 59.3    |
| 0.011               | 45.5    |
| 0.008               | 35.5    |
| 0.006               | 31.9    |
| 0.003               | 24.5    |
| 0.001               | 20.9    |



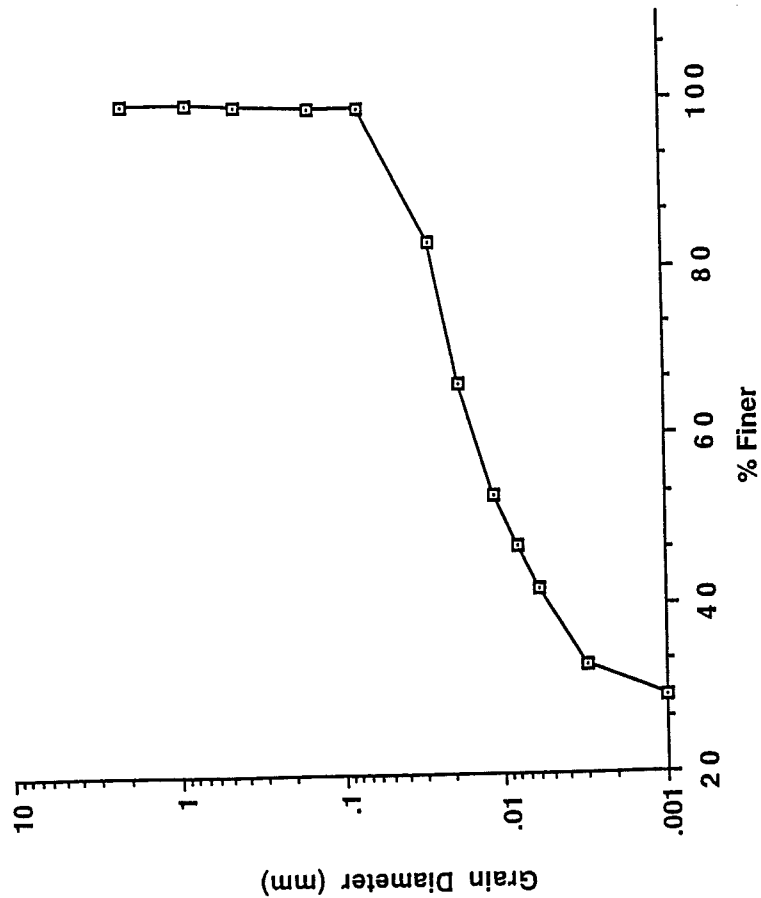


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W5  
Test Date: 1/16/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.6           |
| 0.420                      | 99.2           |
| 0.150                      | 99.0           |
| 0.075                      | 98.8           |
| 0.027                      | 83.0           |
| 0.018                      | 66.0           |
| 0.011                      | 53.0           |
| 0.008                      | 47.0           |
| 0.006                      | 42.0           |
| 0.003                      | 33.0           |
| 0.001                      | 29.0           |



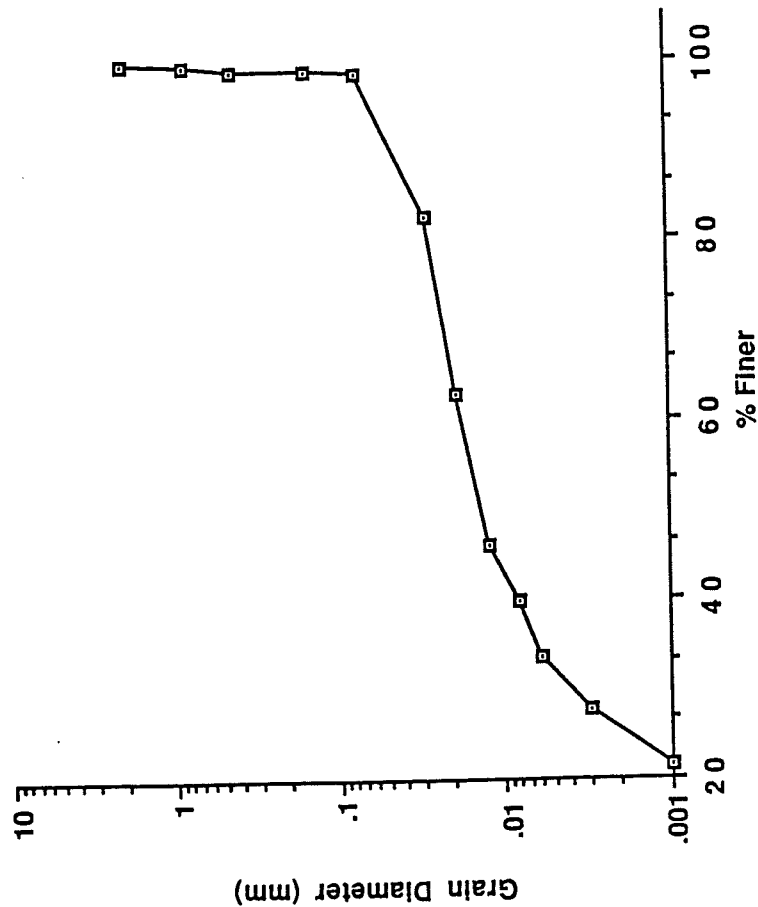


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W5  
Test Date: 1/24/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.3           |
| 0.420                      | 98.9           |
| 0.150                      | 98.7           |
| 0.075                      | 98.6           |
| 0.028                      | 82.6           |
| 0.019                      | 62.5           |
| 0.012                      | 46.2           |
| 0.008                      | 39.7           |
| 0.006                      | 33.5           |
| 0.003                      | 27.7           |
| 0.001                      | 21.4           |





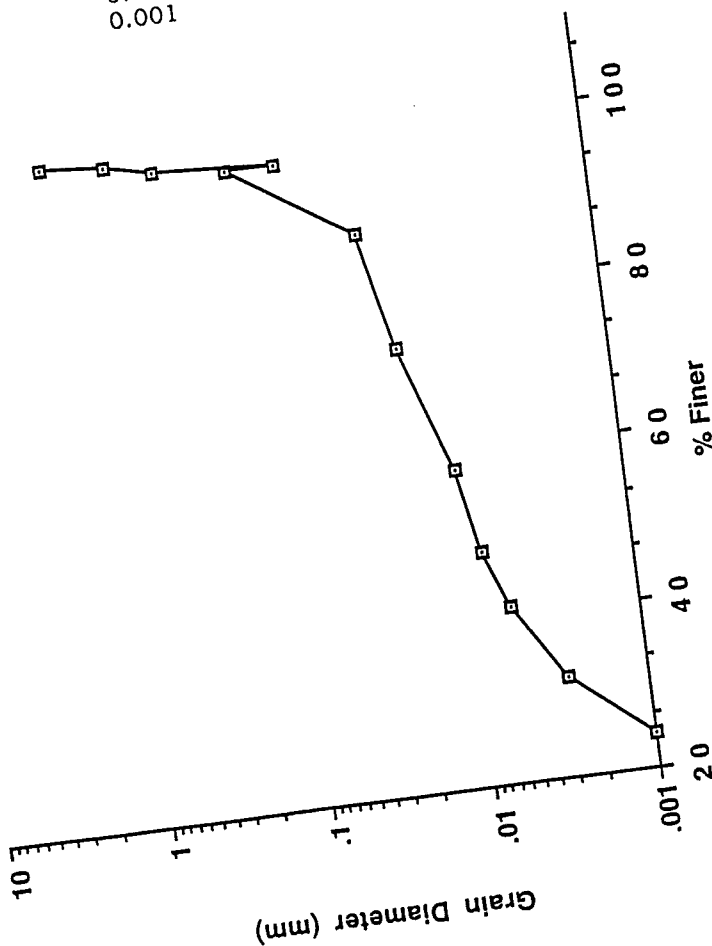
ASHCO, INC.

# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W7  
Test Date: 1/16/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.3    |
| 0.840               | 98.8    |
| 0.420               | 97.3    |
| 0.150               | 96.3    |
| 0.075               | 96.3    |
| 0.026               | 87.0    |
| 0.018               | 73.0    |
| 0.011               | 58.0    |
| 0.008               | 48.0    |
| 0.006               | 41.0    |
| 0.003               | 32.0    |
| 0.001               | 24.0    |





ASHCO, INC.

# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

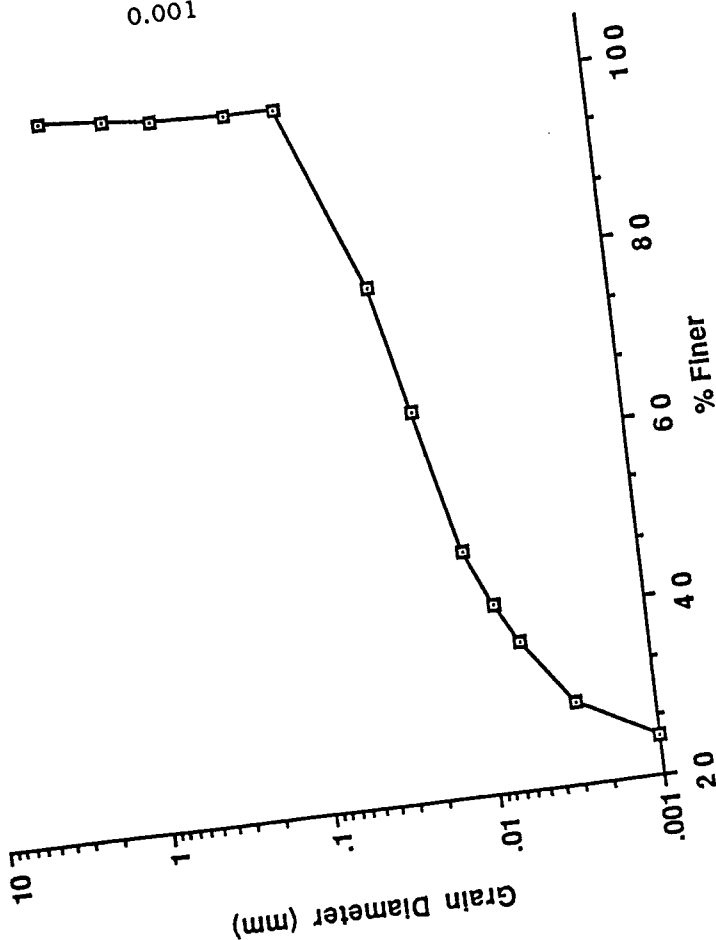
Sample: #2 S0 W7  
Test Date: 1/19/95  
Tested By: JMM

## Grain Diameter (mm)

2.000  
0.840  
0.420  
0.150  
0.075  
0.027  
0.018  
0.011  
0.008  
0.006  
0.003  
0.001

## % Finer

99.9  
99.5  
98.8  
98.6  
98.5  
77.5  
63.3  
47.2  
40.9  
36.7  
29.1  
24.3





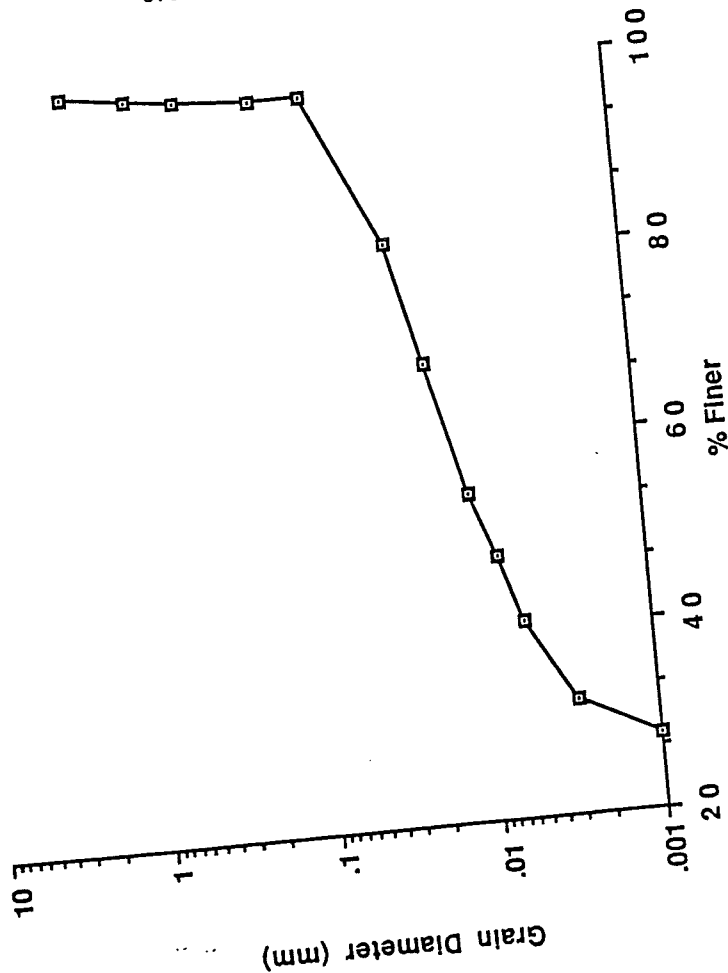
ASHCO, INC.

# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S0 W9  
Test Date: 2/1/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.2           |
| 0.840                      | 98.2           |
| 0.420                      | 97.7           |
| 0.150                      | 97.3           |
| 0.075                      | 97.1           |
| 0.027                      | 81.0           |
| 0.018                      | 68.3           |
| 0.011                      | 54.4           |
| 0.008                      | 47.5           |
| 0.006                      | 40.6           |
| 0.003                      | 32.0           |
| 0.001                      | 27.8           |





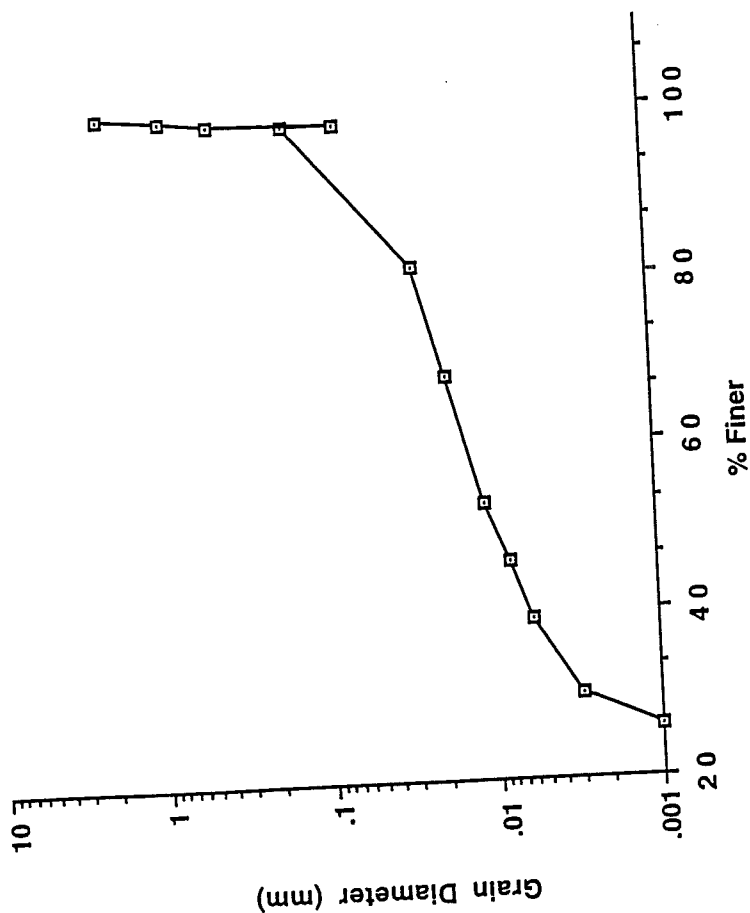
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S0 W9  
Test Date: 1/16/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.3           |
| 0.420                      | 98.6           |
| 0.150                      | 98.3           |
| 0.075                      | 98.3           |
| 0.027                      | 81.0           |
| 0.018                      | 68.0           |
| 0.011                      | 53.0           |
| 0.008                      | 46.0           |
| 0.006                      | 39.0           |
| 0.003                      | 30.0           |
| 0.001                      | 26.0           |



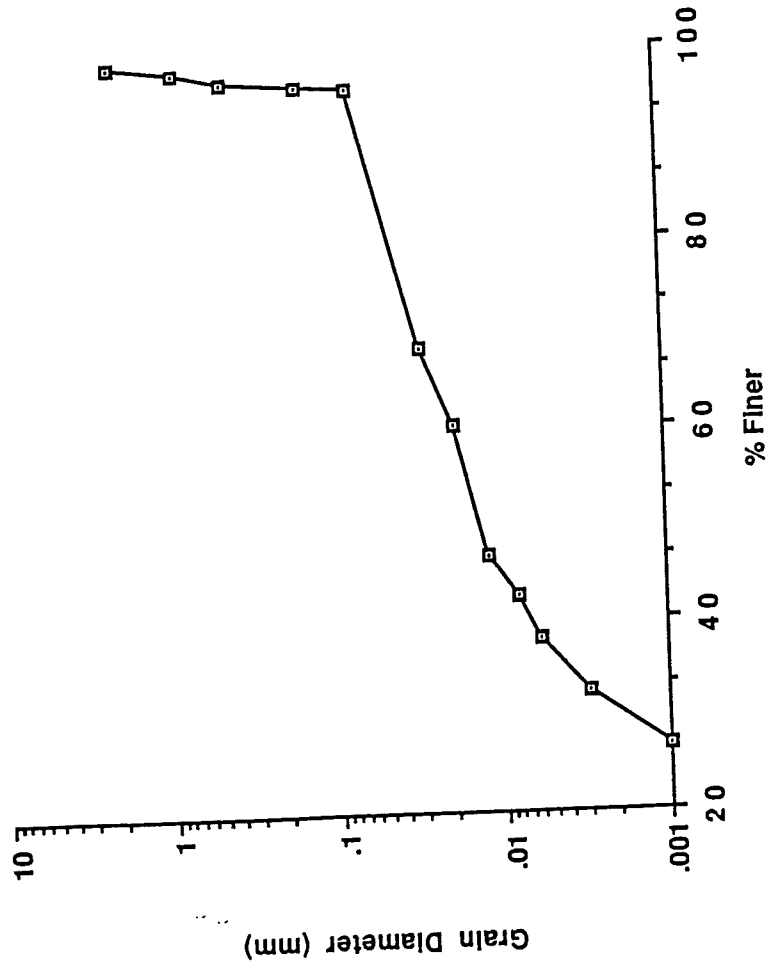


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W3  
Test Date: 2/2/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 98.6           |
| 0.840                      | 97.6           |
| 0.420                      | 96.7           |
| 0.150                      | 96.0           |
| 0.075                      | 95.9           |
| 0.029                      | 68.5           |
| 0.019                      | 60.4           |
| 0.012                      | 46.7           |
| 0.008                      | 42.6           |
| 0.006                      | 38.2           |
| 0.003                      | 32.5           |
| 0.001                      | 26.7           |



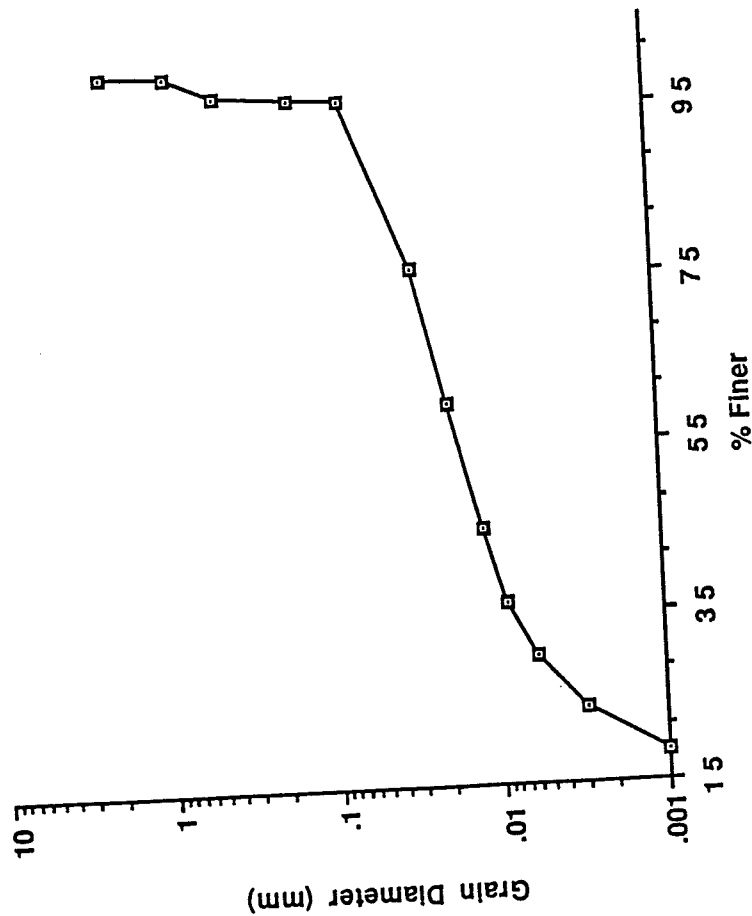


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W3  
Test Date: 1/23/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.3           |
| 0.420                      | 96.8           |
| 0.150                      | 96.1           |
| 0.075                      | 96.0           |
| 0.029                      | 75.7           |
| 0.019                      | 59.8           |
| 0.012                      | 45.1           |
| 0.009                      | 36.4           |
| 0.006                      | 30.2           |
| 0.003                      | 23.8           |
| 0.001                      | 18.3           |



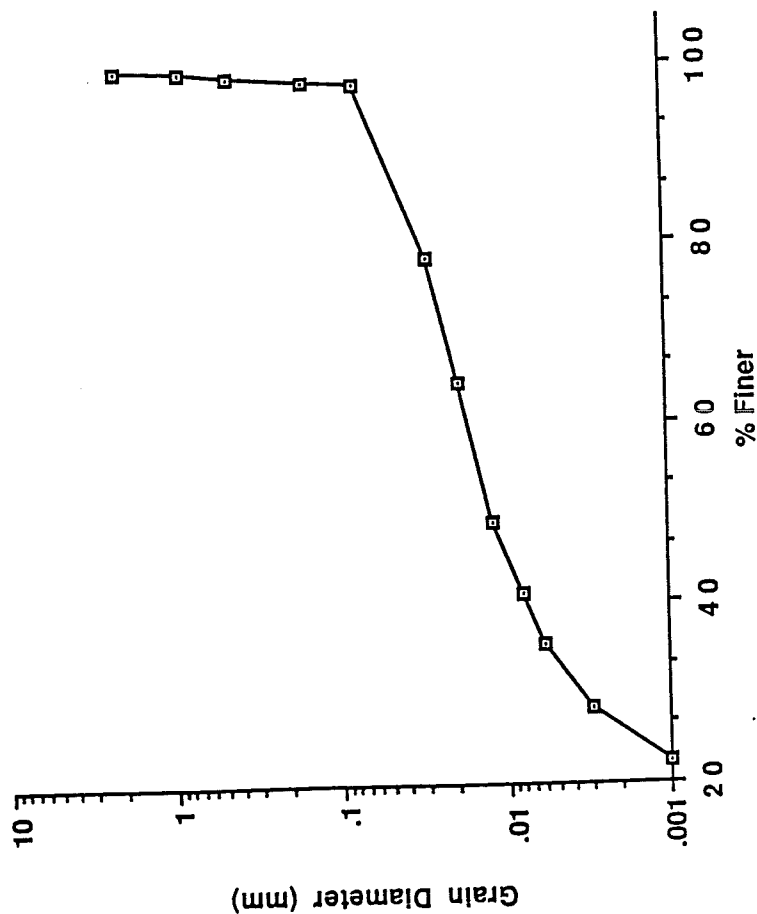


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W5  
Test Date: 1/30/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.4           |
| 0.420                      | 98.6           |
| 0.150                      | 98.1           |
| 0.075                      | 98.0           |
| 0.028                      | 78.4           |
| 0.019                      | 64.5           |
| 0.012                      | 49.0           |
| 0.008                      | 41.1           |
| 0.006                      | 35.3           |
| 0.003                      | 28.2           |
| 0.001                      | 22.4           |



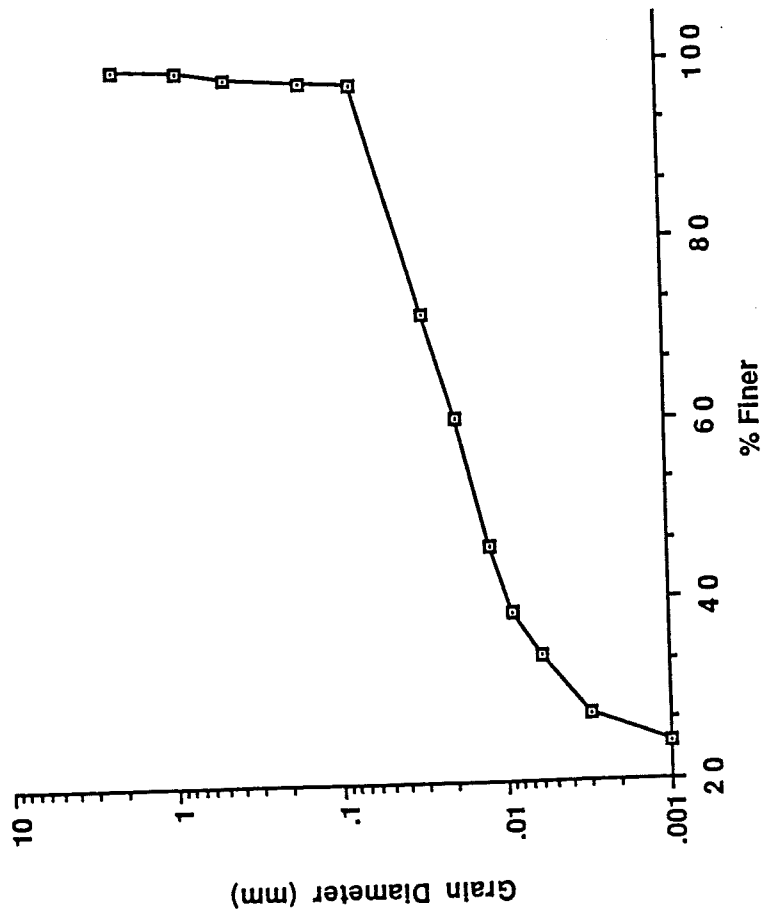


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W5  
Test Date: 1/31/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.7    |
| 0.840               | 99.4    |
| 0.420               | 98.4    |
| 0.150               | 97.8    |
| 0.075               | 97.7    |
| 0.029               | 71.8    |
| 0.019               | 60.2    |
| 0.012               | 46.1    |
| 0.009               | 38.8    |
| 0.006               | 33.9    |
| 0.003               | 27.4    |
| 0.001               | 24.2    |





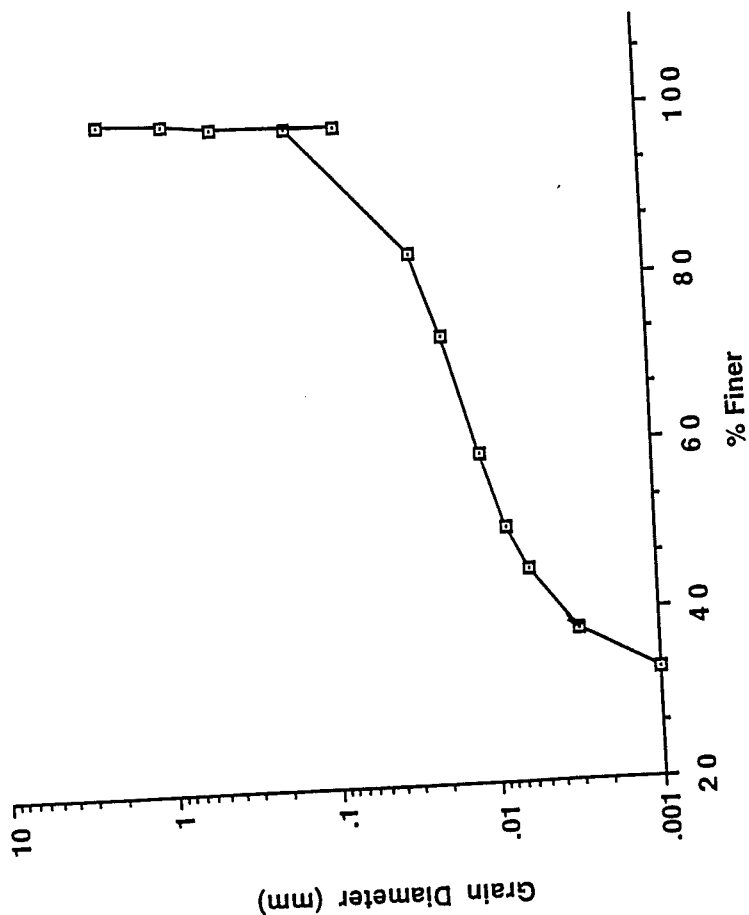
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W7  
Test Date: 1/17/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.3           |
| 0.420                      | 98.7           |
| 0.150                      | 98.4           |
| 0.075                      | 98.4           |
| 0.027                      | 83.0           |
| 0.018                      | 73.0           |
| 0.011                      | 59.0           |
| 0.008                      | 50.0           |
| 0.006                      | 45.0           |
| 0.003                      | 38.0           |
| 0.001                      | 33.0           |



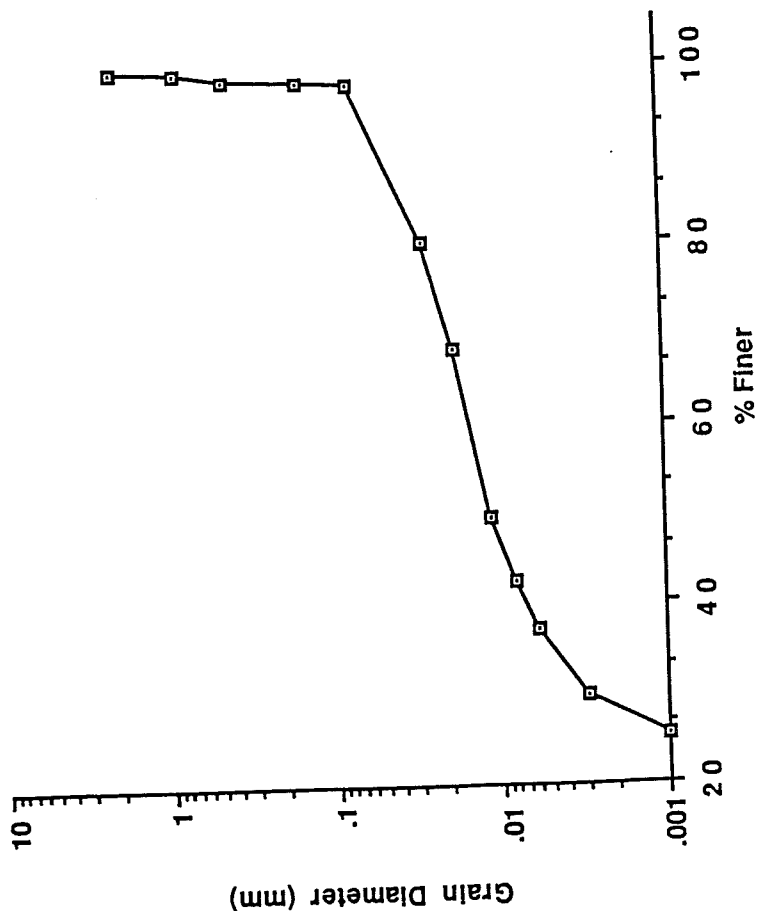


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W7  
Test Date: 2/1/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.3           |
| 0.420                      | 98.6           |
| 0.150                      | 98.2           |
| 0.075                      | 98.0           |
| 0.027                      | 80.1           |
| 0.018                      | 68.2           |
| 0.011                      | 49.6           |
| 0.008                      | 42.4           |
| 0.006                      | 37.3           |
| 0.003                      | 29.9           |
| 0.001                      | 25.2           |



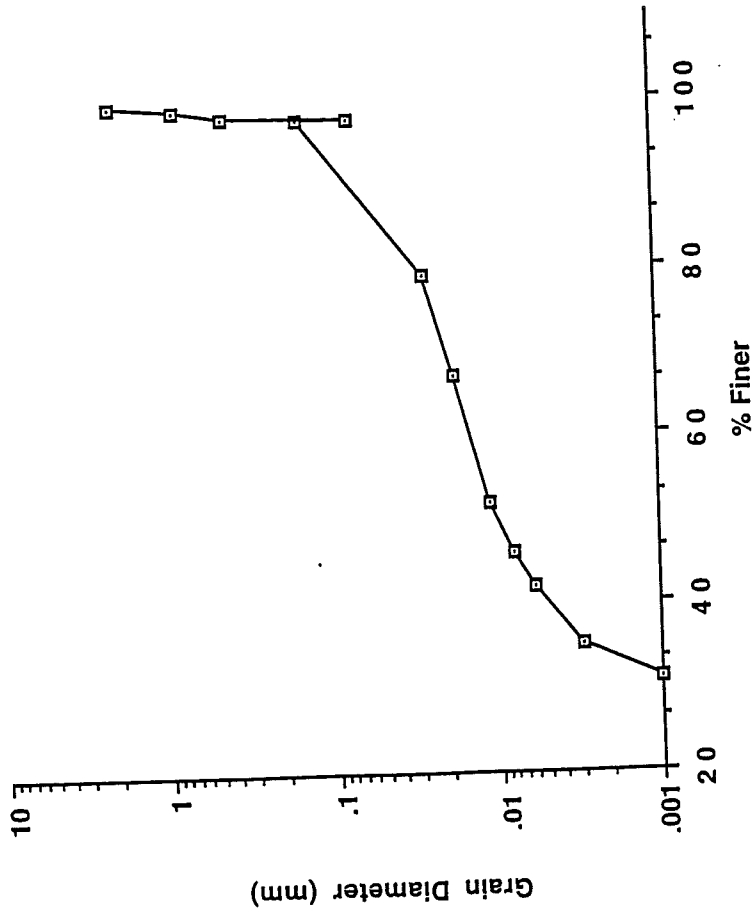


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W9  
Test Date: 1/13/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.6           |
| 0.840                      | 99.1           |
| 0.420                      | 98.1           |
| 0.150                      | 97.6           |
| 0.075                      | 97.6           |
| 0.027                      | 79.0           |
| 0.018                      | 67.0           |
| 0.011                      | 52.0           |
| 0.008                      | 46.0           |
| 0.006                      | 42.0           |
| 0.003                      | 35.0           |
| 0.001                      | 31.0           |





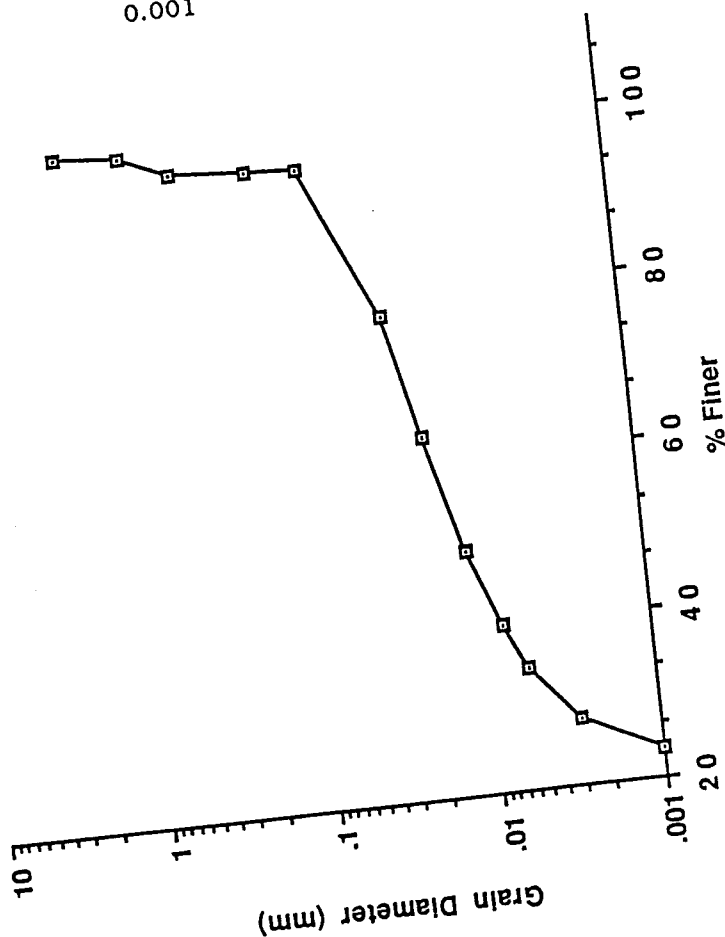
ASHCO, INC.

# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W9  
Test Date: 1/30/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 98.9    |
| 0.420               | 96.5    |
| 0.150               | 95.8    |
| 0.075               | 95.7    |
| 0.028               | 77.2    |
| 0.019               | 62.7    |
| 0.012               | 48.8    |
| 0.008               | 39.9    |
| 0.006               | 34.5    |
| 0.003               | 27.9    |
| 0.001               | 23.4    |





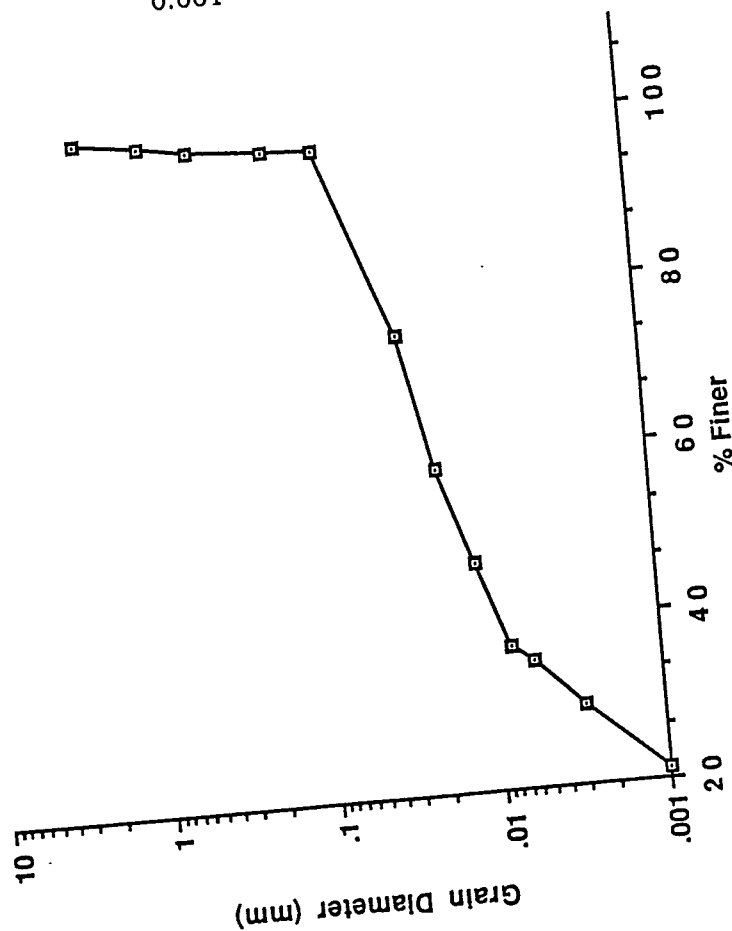
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S2 W11  
Test Date: 2/2/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.5           |
| 0.840                      | 98.7           |
| 0.420                      | 97.7           |
| 0.150                      | 97.0           |
| 0.075                      | 96.9           |
| 0.028                      | 74.1           |
| 0.019                      | 58.4           |
| 0.012                      | 47.1           |
| 0.008                      | 36.8           |
| 0.006                      | 35.1           |
| 0.003                      | 29.5           |
| 0.001                      | 21.3           |





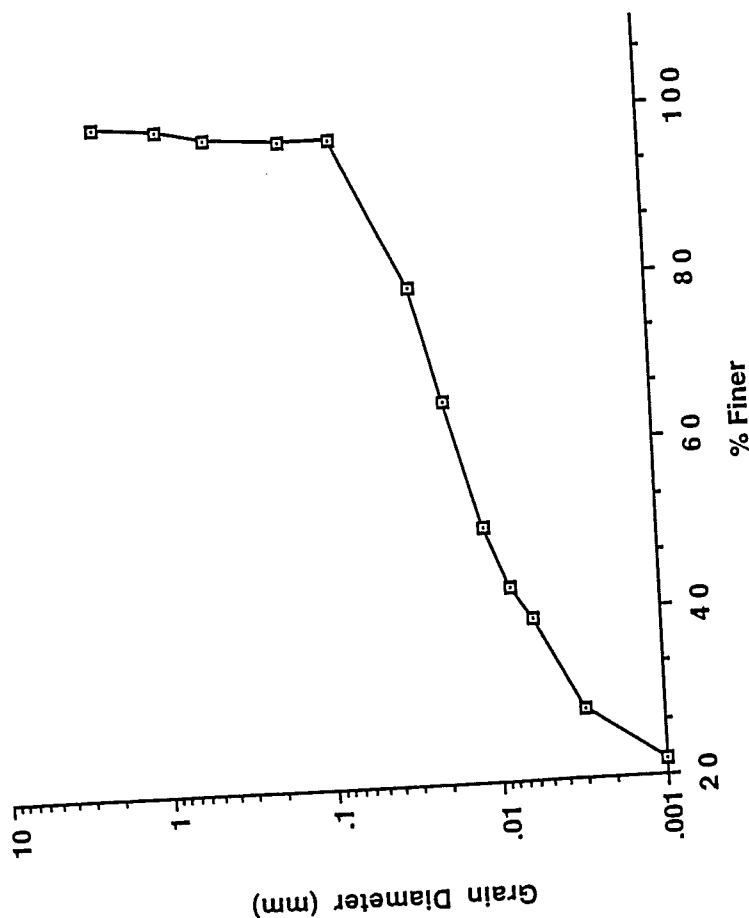
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S2 W11  
Test Date: 1/17/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.6           |
| 0.840                      | 99.0           |
| 0.420                      | 97.9           |
| 0.150                      | 97.0           |
| 0.075                      | 97.0           |
| 0.027                      | 79.0           |
| 0.018                      | 65.0           |
| 0.011                      | 50.0           |
| 0.008                      | 43.0           |
| 0.006                      | 39.0           |
| 0.003                      | 28.0           |
| 0.001                      | 22.0           |





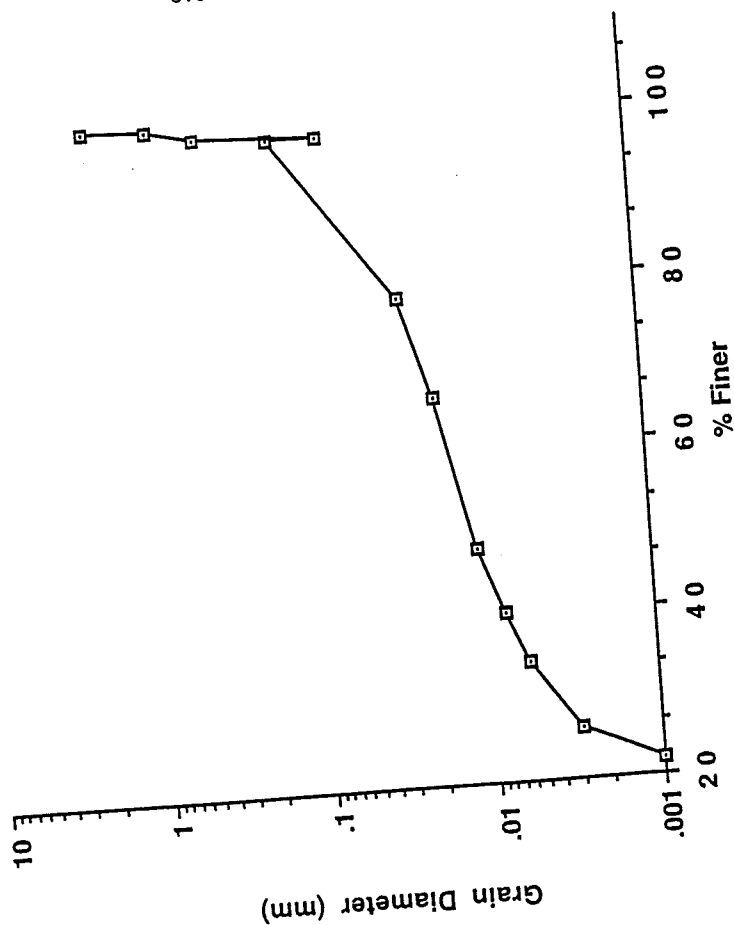
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W3  
Test Date: 1/17/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.7           |
| 0.420                      | 98.5           |
| 0.150                      | 97.8           |
| 0.075                      | 97.8           |
| 0.027                      | 78.0           |
| 0.018                      | 66.0           |
| 0.011                      | 48.0           |
| 0.008                      | 40.0           |
| 0.006                      | 34.0           |
| 0.003                      | 26.0           |
| 0.001                      | 22.0           |



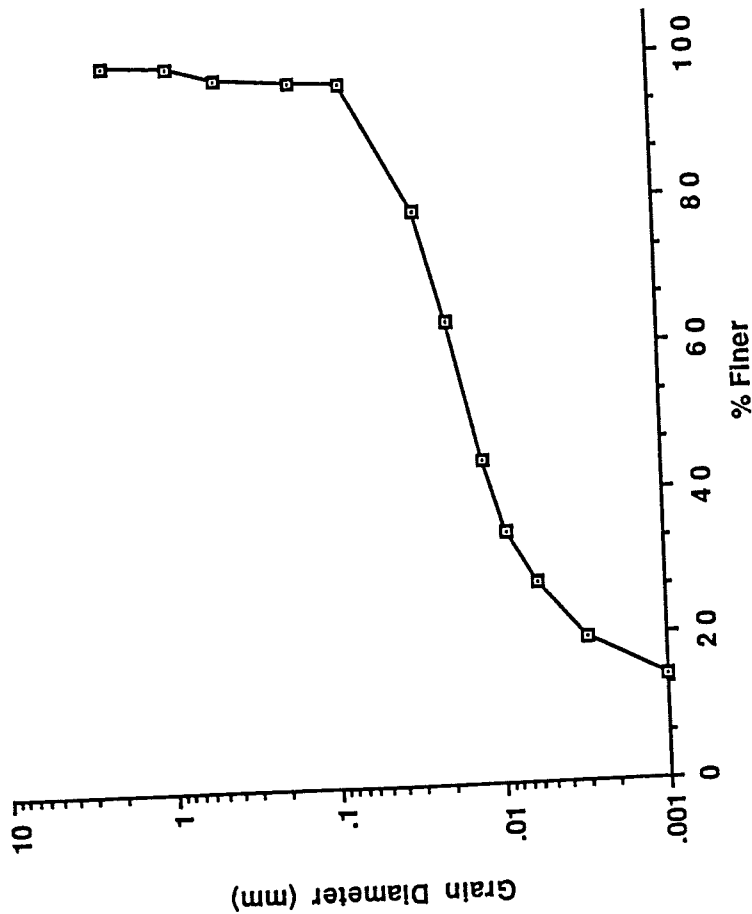


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W3  
Test Date: 1/23/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.6           |
| 0.420                      | 97.7           |
| 0.150                      | 96.8           |
| 0.075                      | 96.7           |
| 0.028                      | 78.5           |
| 0.019                      | 63.4           |
| 0.012                      | 44.1           |
| 0.009                      | 34.5           |
| 0.006                      | 27.6           |
| 0.003                      | 19.8           |
| 0.001                      | 14.1           |





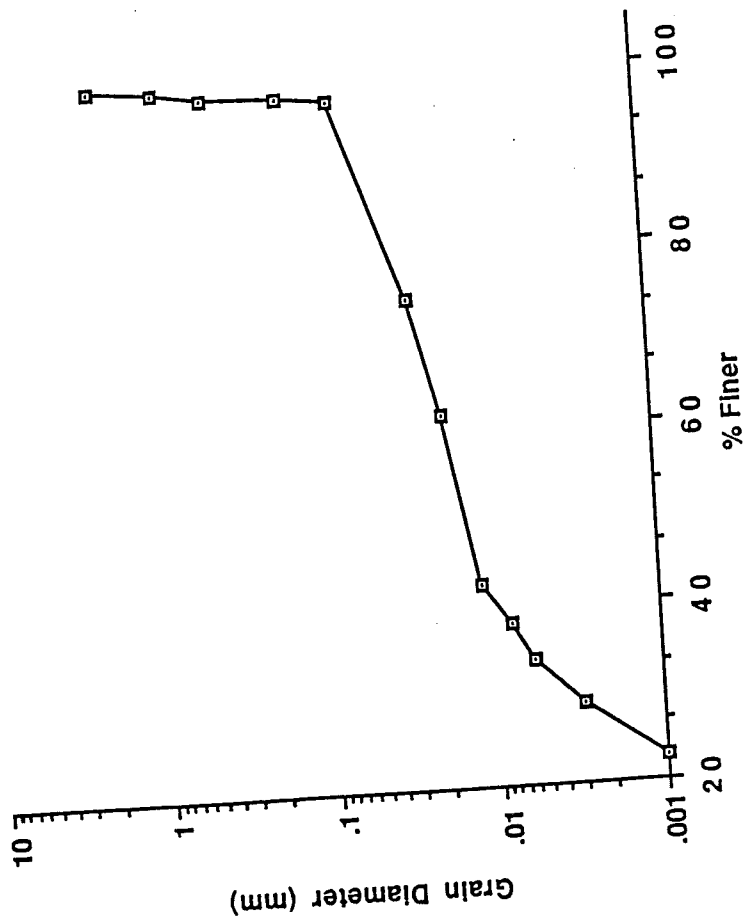
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W5  
Test Date: 2/1/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.5           |
| 0.840                      | 98.7           |
| 0.420                      | 97.9           |
| 0.150                      | 97.6           |
| 0.075                      | 97.0           |
| 0.028                      | 74.5           |
| 0.019                      | 61.4           |
| 0.012                      | 42.4           |
| 0.008                      | 38.2           |
| 0.006                      | 34.0           |
| 0.003                      | 28.9           |
| 0.001                      | 22.7           |





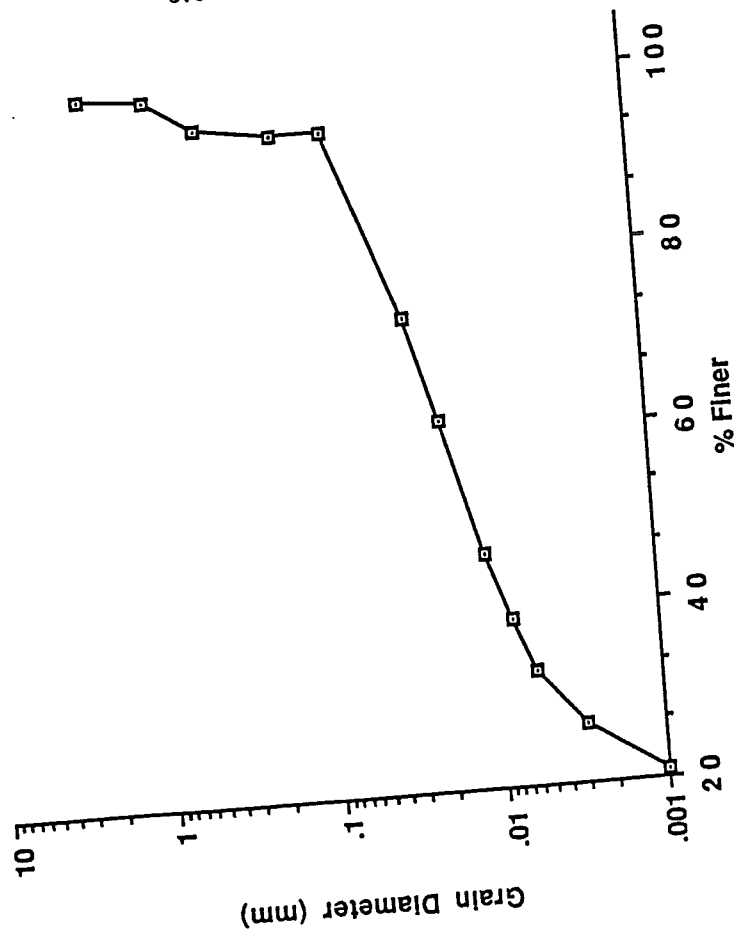
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W5  
Test Date: 1/19/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.4           |
| 0.840                      | 98.7           |
| 0.420                      | 95.3           |
| 0.150                      | 94.1           |
| 0.075                      | 93.9           |
| 0.028                      | 72.8           |
| 0.019                      | 61.1           |
| 0.011                      | 46.1           |
| 0.008                      | 38.6           |
| 0.006                      | 32.8           |
| 0.003                      | 26.6           |
| 0.001                      | 20.8           |





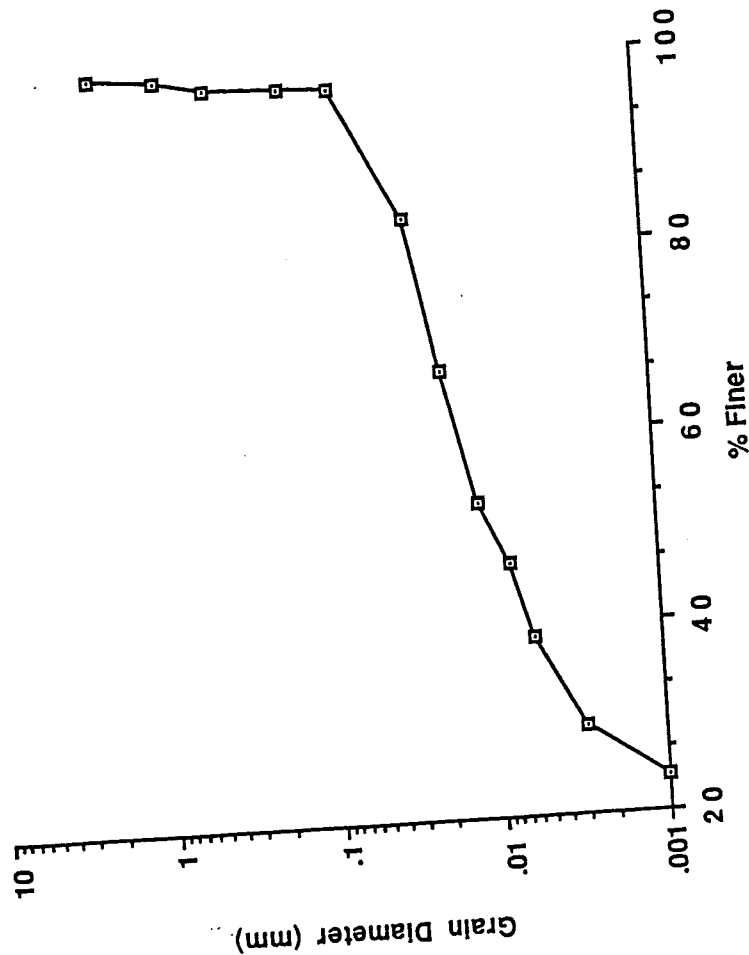
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W7  
Test Date: 1/24/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.2           |
| 0.840                      | 98.5           |
| 0.420                      | 97.5           |
| 0.150                      | 97.1           |
| 0.075                      | 97.0           |
| 0.028                      | 82.9           |
| 0.019                      | 66.9           |
| 0.012                      | 53.0           |
| 0.008                      | 46.6           |
| 0.006                      | 38.7           |
| 0.003                      | 29.3           |
| 0.001                      | 23.7           |





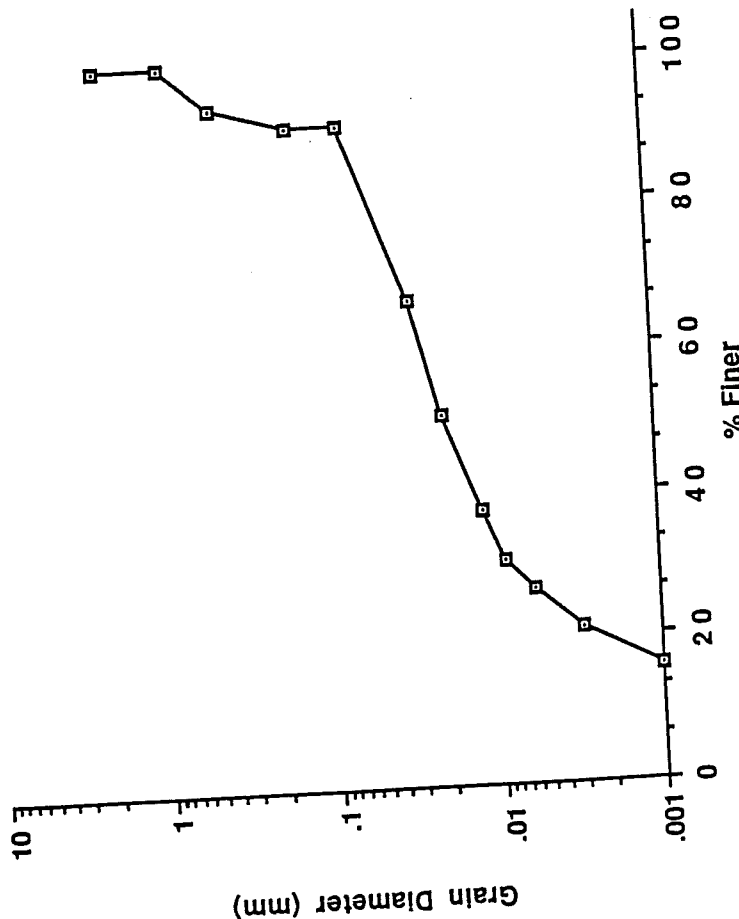
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W7  
Test Date: 1/25/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.7           |
| 0.420                      | 94.0           |
| 0.150                      | 91.3           |
| 0.075                      | 91.2           |
| 0.030                      | 66.6           |
| 0.020                      | 50.9           |
| 0.012                      | 37.7           |
| 0.009                      | 30.9           |
| 0.006                      | 26.6           |
| 0.003                      | 21.4           |
| 0.001                      | 15.9           |



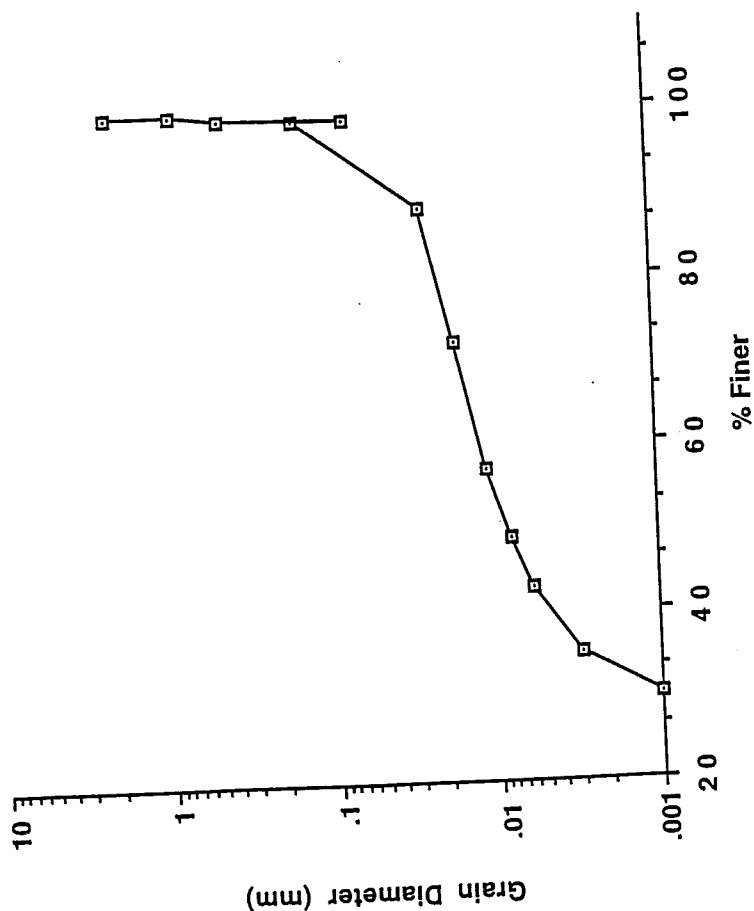


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W9  
Test Date: 1/13/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.6           |
| 0.420                      | 98.9           |
| 0.150                      | 98.6           |
| 0.075                      | 98.6           |
| 0.026                      | 88.0           |
| 0.017                      | 72.0           |
| 0.011                      | 57.0           |
| 0.008                      | 49.0           |
| 0.006                      | 43.0           |
| 0.003                      | 35.0           |
| 0.001                      | 30.0           |



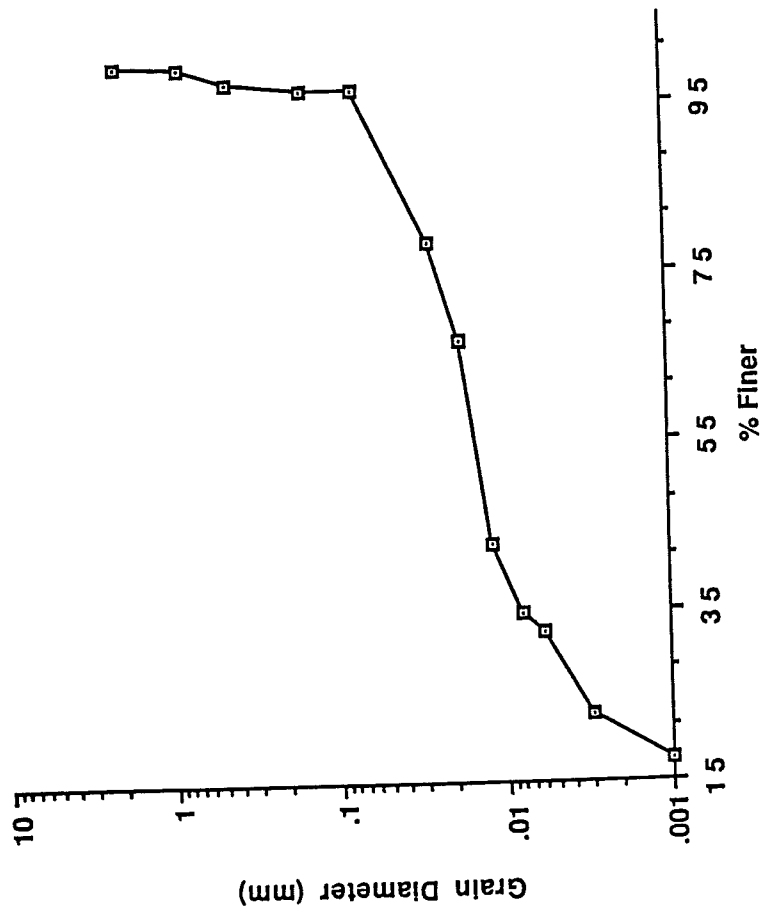


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S4 W9  
Test Date: 1/19/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.5           |
| 0.420                      | 97.6           |
| 0.150                      | 96.5           |
| 0.075                      | 96.4           |
| 0.027                      | 78.4           |
| 0.018                      | 66.7           |
| 0.012                      | 42.9           |
| 0.008                      | 34.9           |
| 0.006                      | 32.7           |
| 0.003                      | 22.8           |
| 0.001                      | 17.5           |



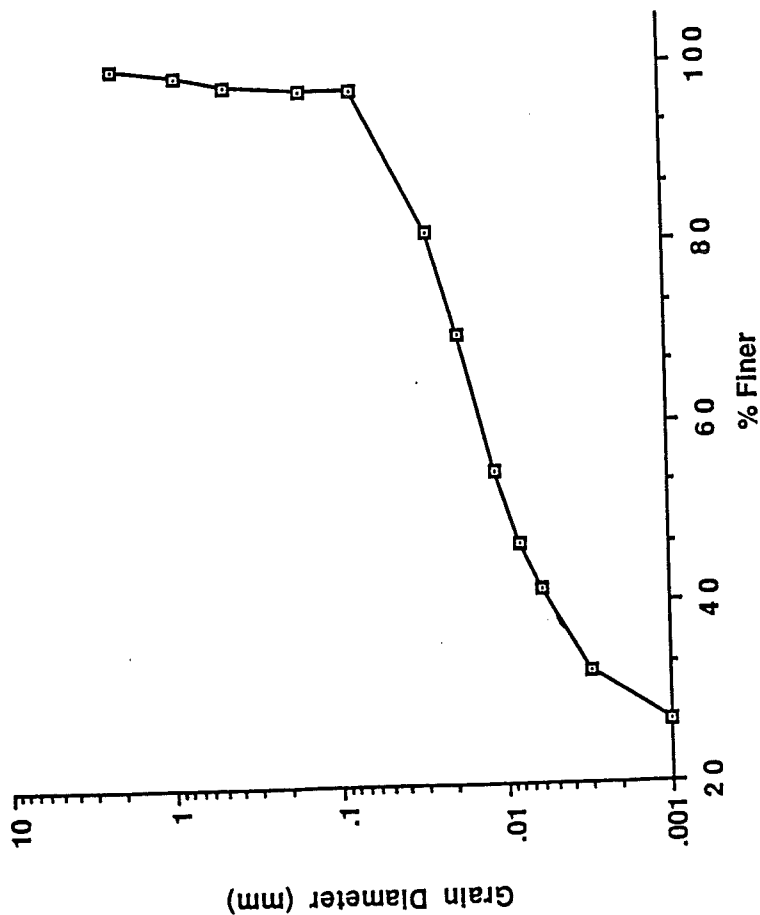


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S4 W11  
Test Date: 1/13/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 99.2           |
| 0.420                      | 97.9           |
| 0.150                      | 97.4           |
| 0.075                      | 97.3           |
| 0.027                      | 81.2           |
| 0.018                      | 69.9           |
| 0.011                      | 54.6           |
| 0.008                      | 46.8           |
| 0.006                      | 41.6           |
| 0.003                      | 32.5           |
| 0.001                      | 26.9           |





ASHCO, INC.

# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

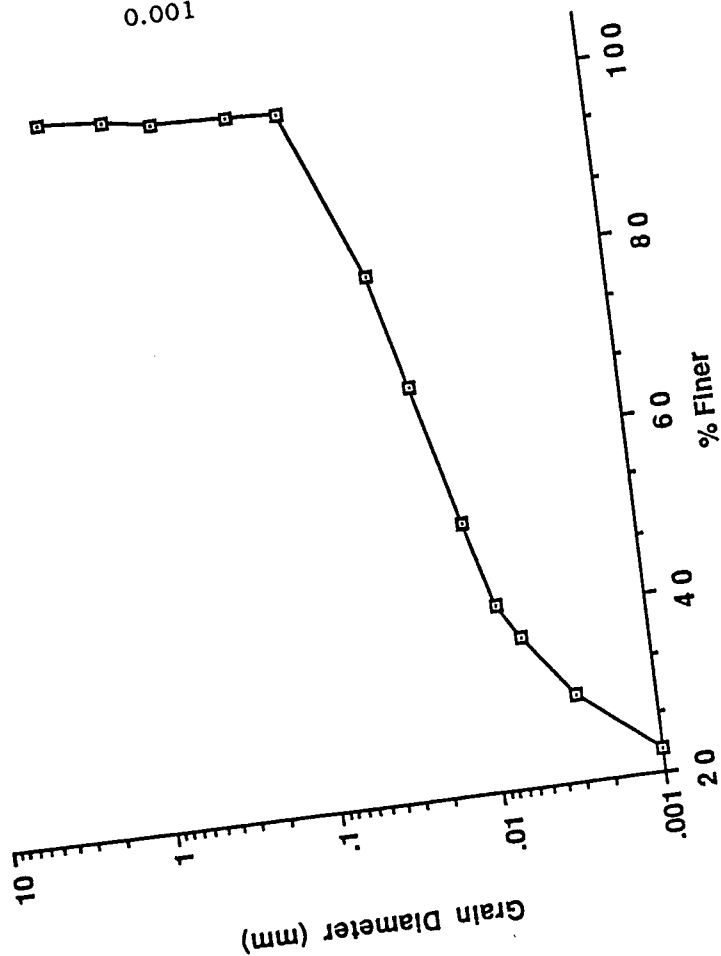
Sample: #2 S4 W11  
Test Date: 1/23/95  
Tested By: JMM

Grain Diameter (mm)

% Finer

2.000  
0.840  
0.420  
0.150  
0.075  
0.028  
0.019  
0.011  
0.008  
0.006  
0.003  
0.001

99.9  
99.4  
98.6  
98.1  
98.0  
78.6  
66.0  
50.3  
40.8  
36.8  
29.8  
22.8





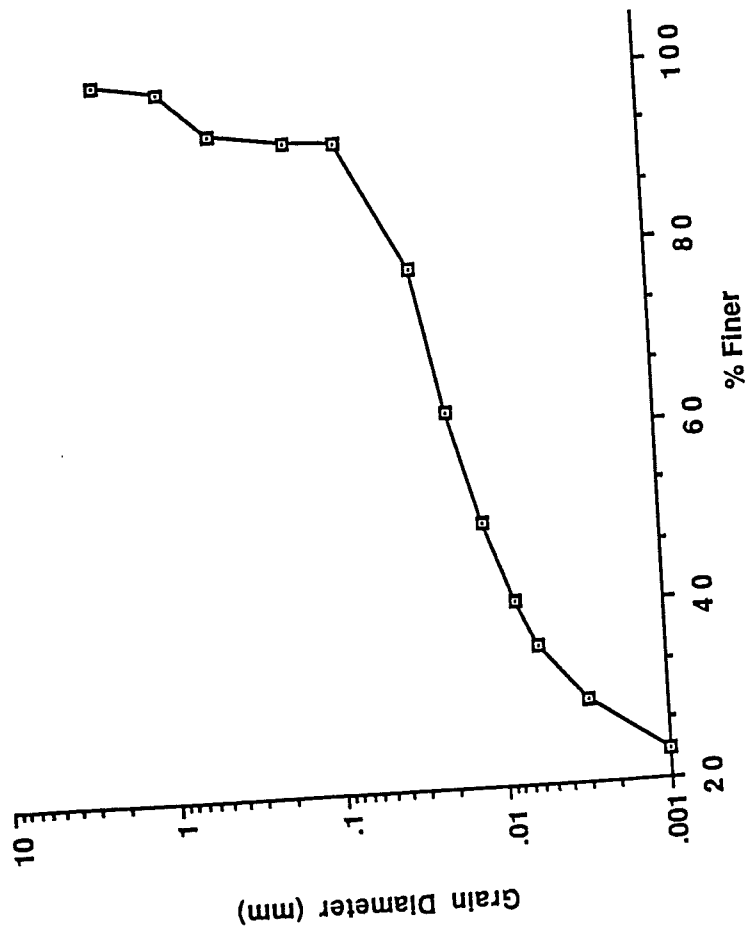
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S6 W5  
Test Date: 1/18/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.9           |
| 0.840                      | 98.9           |
| 0.420                      | 93.7           |
| 0.150                      | 92.5           |
| 0.075                      | 92.4           |
| 0.028                      | 77.7           |
| 0.019                      | 61.9           |
| 0.012                      | 49.2           |
| 0.008                      | 40.4           |
| 0.006                      | 35.3           |
| 0.003                      | 29.1           |
| 0.001                      | 23.2           |





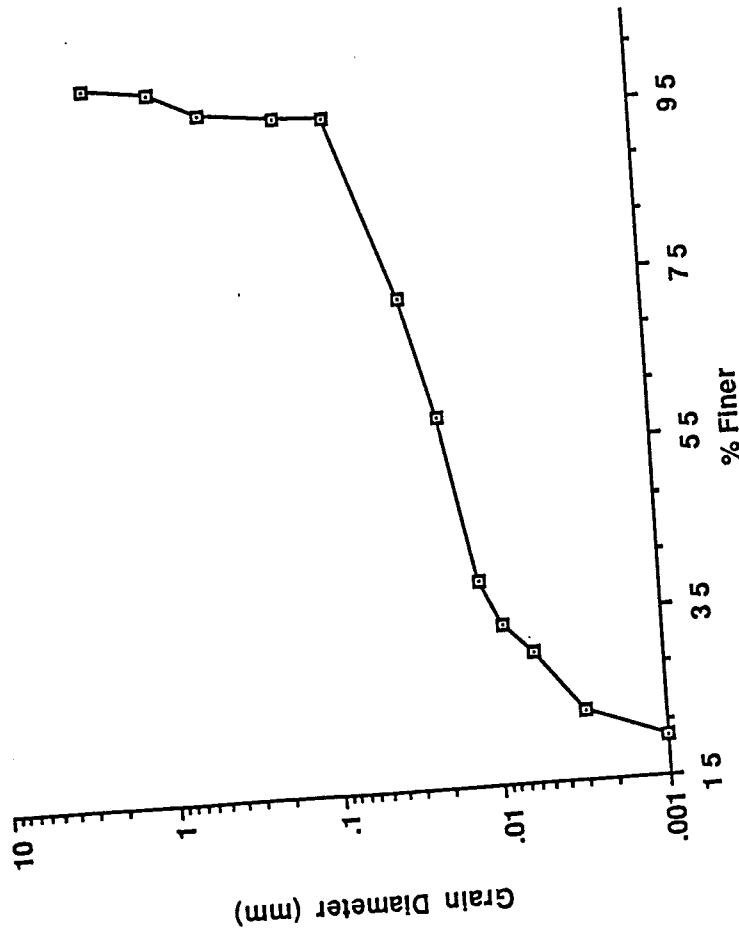
ASHCO, INC.

## GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S6 W5  
Test Date: 1/30/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.6           |
| 0.840                      | 98.7           |
| 0.420                      | 95.8           |
| 0.150                      | 94.9           |
| 0.075                      | 94.8           |
| 0.029                      | 72.7           |
| 0.019                      | 58.7           |
| 0.012                      | 39.1           |
| 0.009                      | 33.9           |
| 0.006                      | 30.3           |
| 0.003                      | 23.1           |
| 0.001                      | 19.7           |



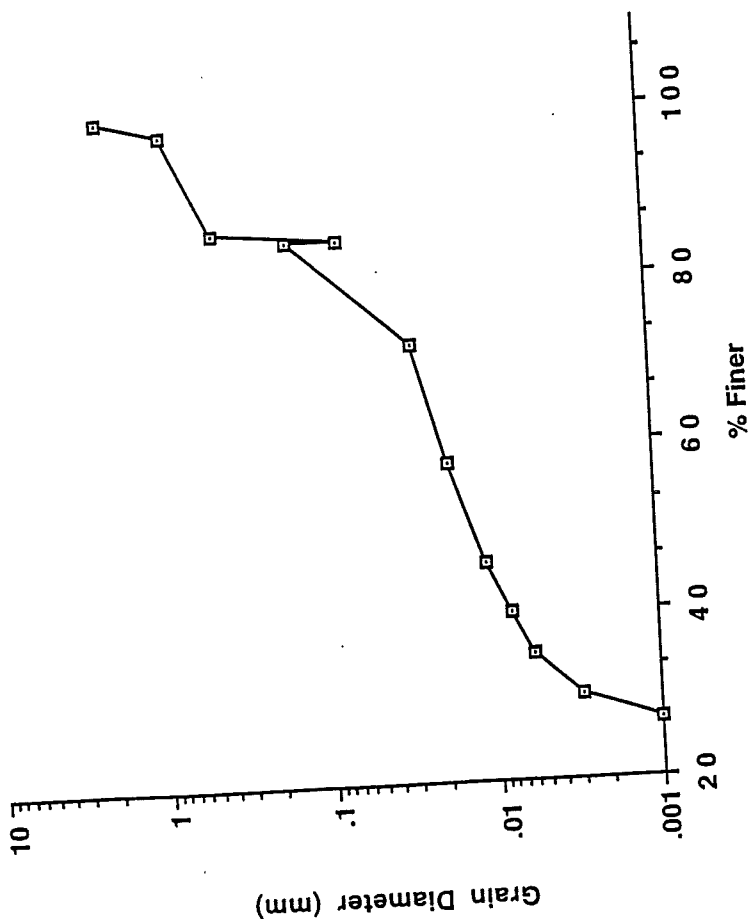


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S6 W7  
Test Date: 1/13/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.7    |
| 0.840               | 97.8    |
| 0.420               | 86.0    |
| 0.150               | 84.7    |
| 0.075               | 84.7    |
| 0.028               | 72.0    |
| 0.018               | 58.0    |
| 0.011               | 46.0    |
| 0.008               | 40.0    |
| 0.006               | 35.0    |
| 0.003               | 30.0    |
| 0.001               | 27.0    |



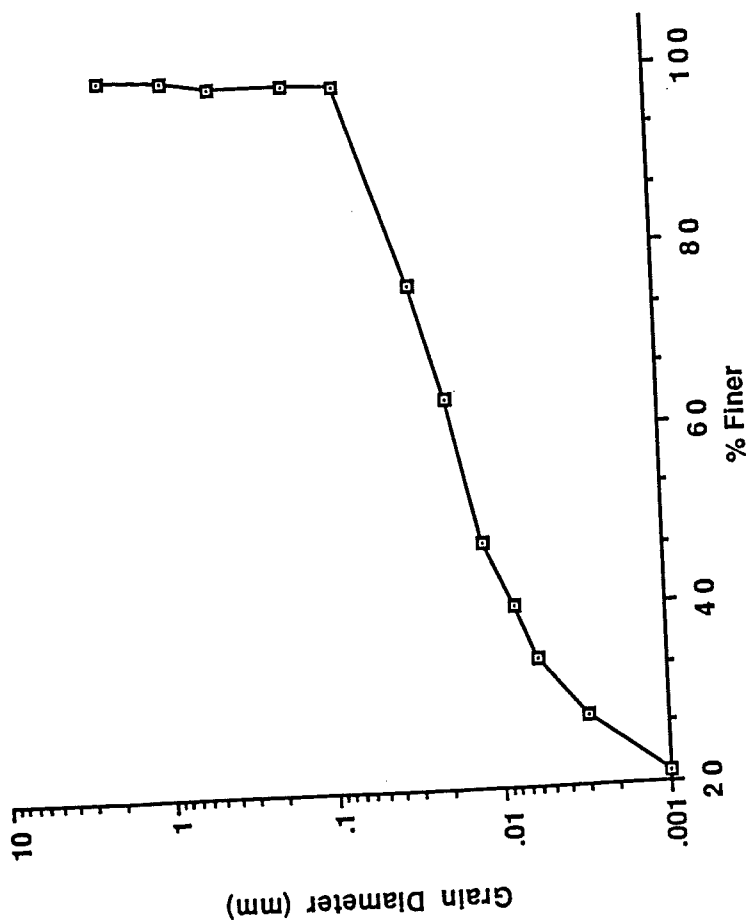


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S6 W7  
Test Date: 1/30/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.9    |
| 0.840               | 99.6    |
| 0.420               | 98.9    |
| 0.150               | 98.7    |
| 0.075               | 98.6    |
| 0.029               | 75.9    |
| 0.019               | 63.1    |
| 0.012               | 47.3    |
| 0.008               | 40.1    |
| 0.006               | 34.3    |
| 0.003               | 27.8    |
| 0.001               | 21.2    |



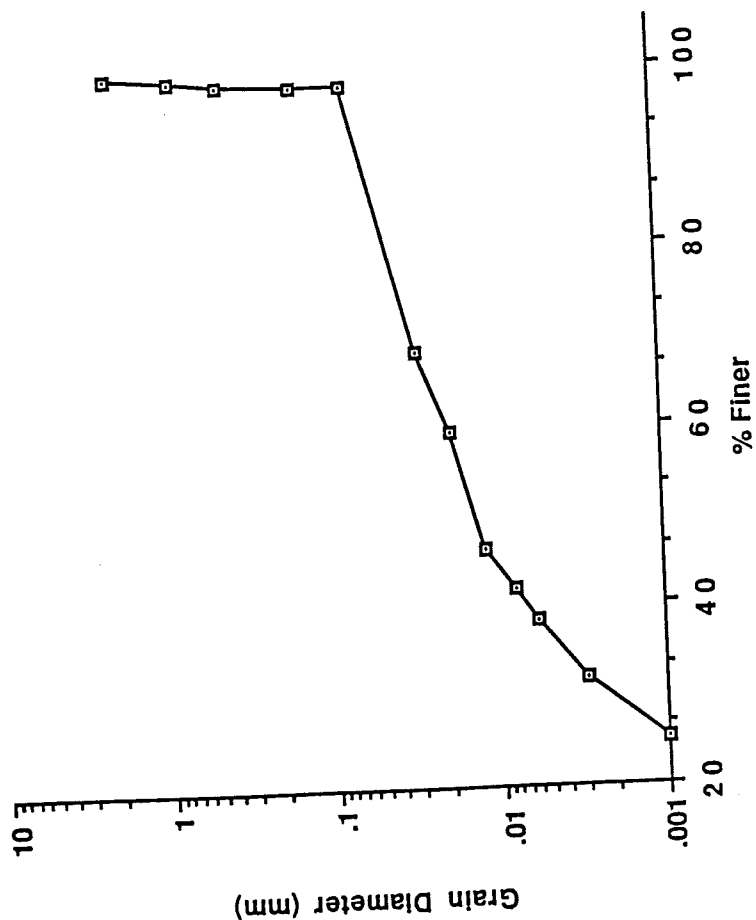


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S6 W9  
Test Date: 2/2/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.1           |
| 0.420                      | 98.3           |
| 0.150                      | 98.2           |
| 0.075                      | 98.1           |
| 0.029                      | 68.4           |
| 0.019                      | 59.5           |
| 0.012                      | 46.4           |
| 0.008                      | 41.8           |
| 0.006                      | 38.5           |
| 0.003                      | 31.9           |
| 0.001                      | 25.1           |



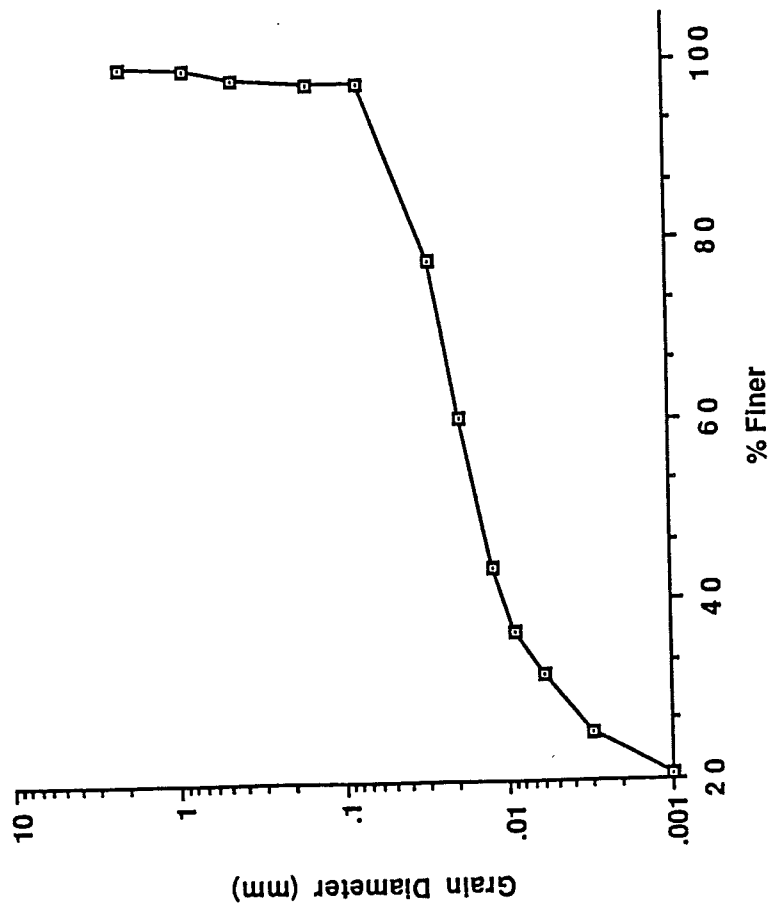


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S6 W9  
Test Date: 1/31/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.7           |
| 0.840                      | 99.3           |
| 0.420                      | 98.3           |
| 0.150                      | 97.6           |
| 0.075                      | 97.5           |
| 0.028                      | 77.8           |
| 0.019                      | 60.3           |
| 0.012                      | 43.6           |
| 0.009                      | 36.7           |
| 0.006                      | 31.7           |
| 0.003                      | 25.4           |
| 0.001                      | 20.6           |



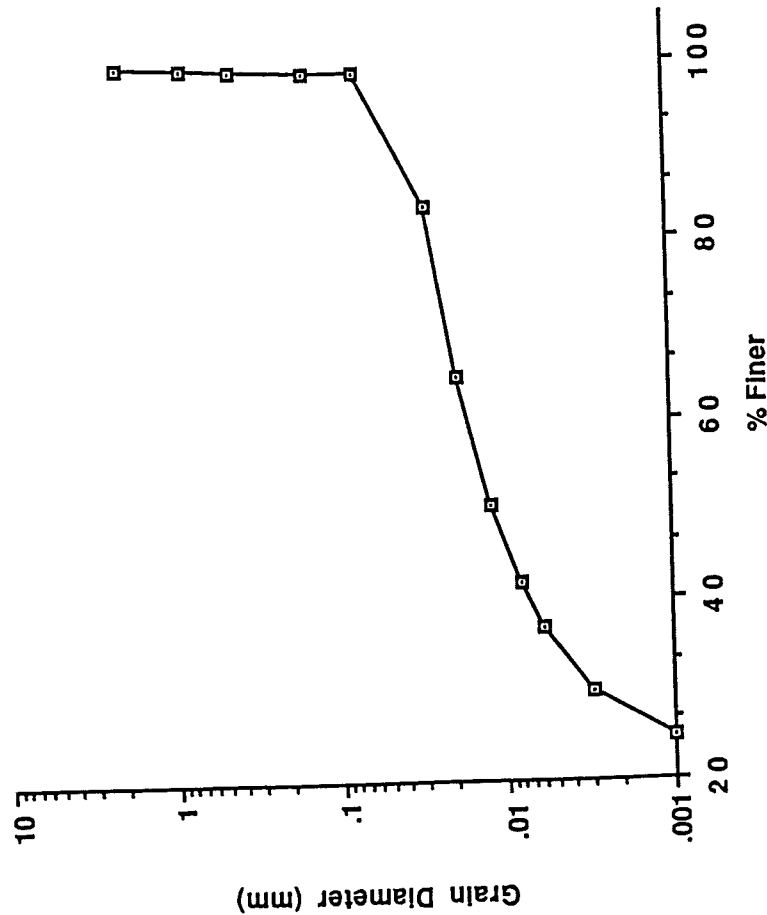


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S6 W11  
Test Date: 1/31/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.4    |
| 0.420               | 98.9    |
| 0.150               | 98.8    |
| 0.075               | 98.7    |
| 0.028               | 83.7    |
| 0.019               | 64.6    |
| 0.012               | 50.6    |
| 0.008               | 42.0    |
| 0.006               | 36.9    |
| 0.003               | 29.7    |
| 0.001               | 24.7    |



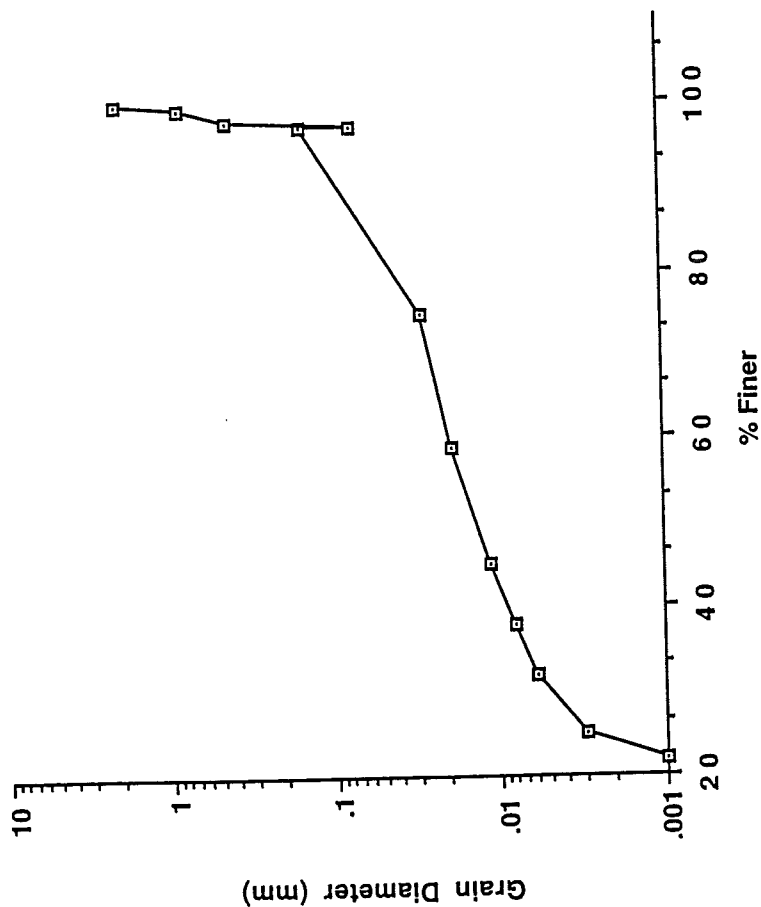


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S6 W11  
Test Date: 1/16/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.3    |
| 0.420               | 97.6    |
| 0.150               | 97.0    |
| 0.075               | 97.0    |
| 0.028               | 75.0    |
| 0.019               | 59.0    |
| 0.011               | 45.0    |
| 0.008               | 38.0    |
| 0.006               | 32.0    |
| 0.003               | 25.0    |
| 0.001               | 22.0    |



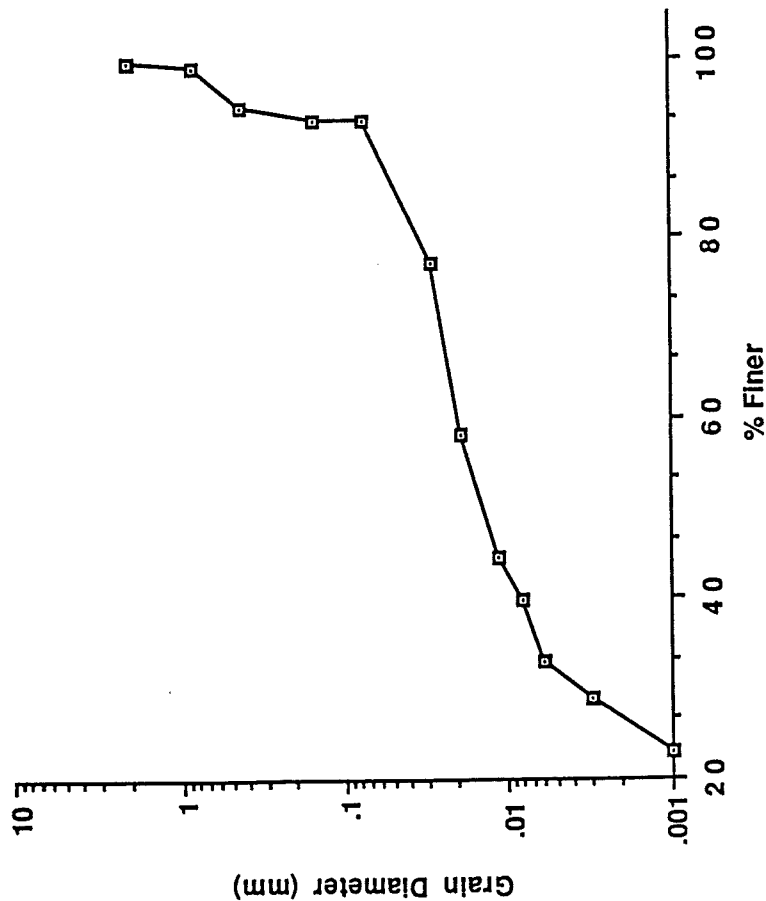


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S8 W5  
Test Date: 1/18/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.0    |
| 0.420               | 94.7    |
| 0.150               | 93.3    |
| 0.075               | 93.2    |
| 0.028               | 77.1    |
| 0.019               | 58.2    |
| 0.011               | 44.5    |
| 0.008               | 39.9    |
| 0.006               | 33.1    |
| 0.003               | 28.8    |
| 0.001               | 22.9    |



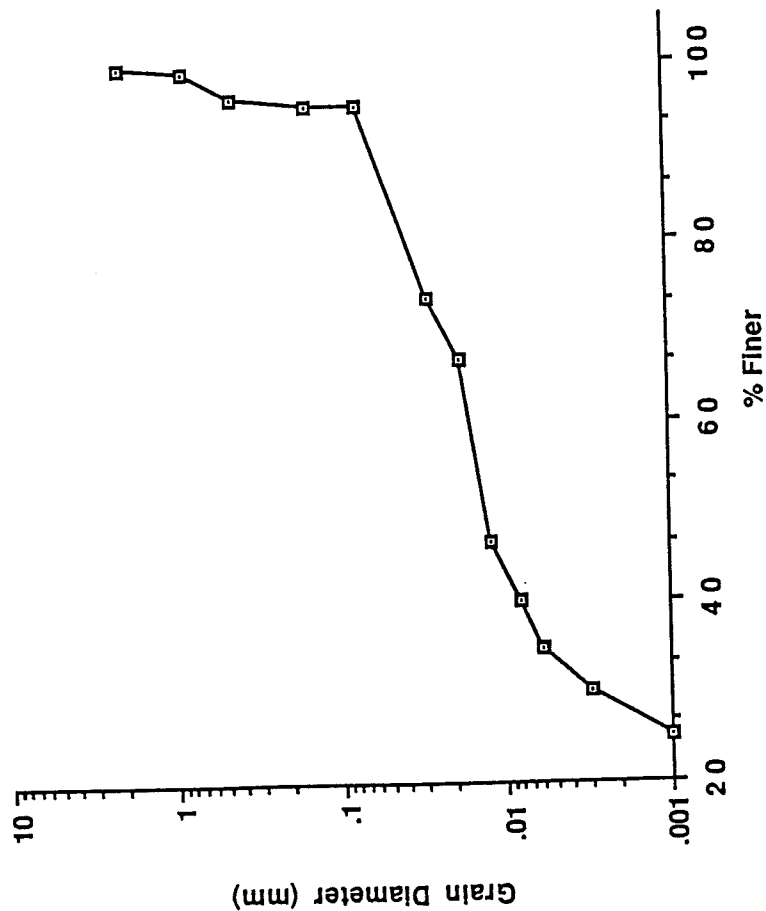


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S8 W5  
Test Date: 2/2/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.8           |
| 0.840                      | 99.1           |
| 0.420                      | 96.1           |
| 0.150                      | 95.3           |
| 0.075                      | 95.2           |
| 0.028                      | 73.6           |
| 0.018                      | 66.9           |
| 0.012                      | 46.6           |
| 0.008                      | 40.2           |
| 0.006                      | 34.9           |
| 0.003                      | 30.2           |
| 0.001                      | 24.9           |



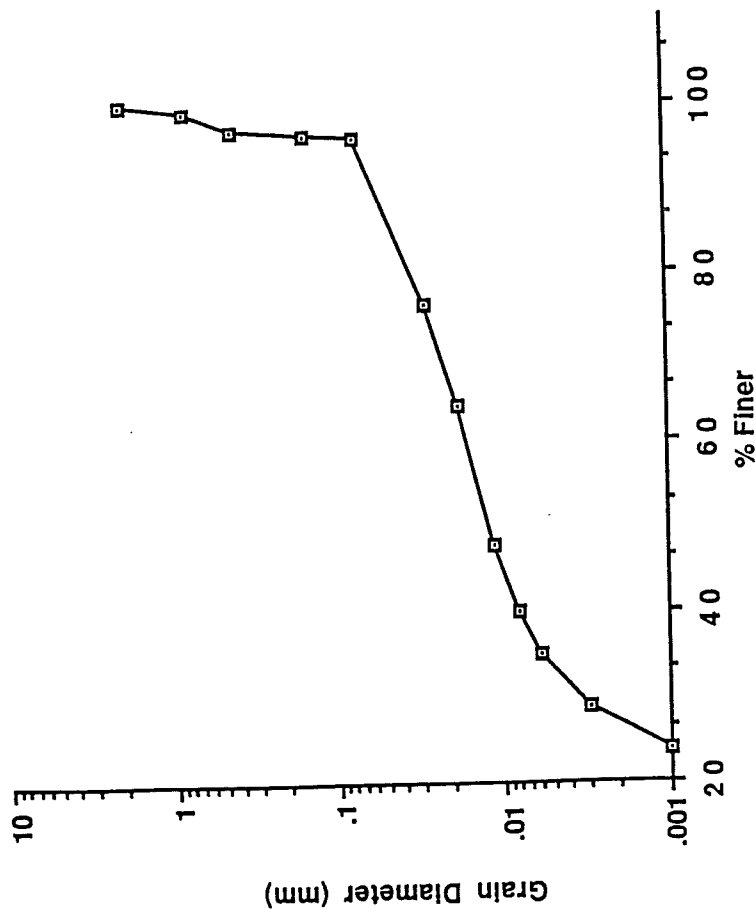


# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #1 S8 W7  
Test Date: 2/1/95  
Tested By: JMM

| Grain Diameter (mm) | % Finer |
|---------------------|---------|
| 2.000               | 99.8    |
| 0.840               | 99.2    |
| 0.420               | 96.7    |
| 0.150               | 96.1    |
| 0.075               | 96.0    |
| 0.028               | 76.0    |
| 0.018               | 64.2    |
| 0.011               | 48.0    |
| 0.008               | 40.0    |
| 0.006               | 35.0    |
| 0.003               | 28.7    |
| 0.001               | 23.9    |





# GRAIN SIZE DISTRIBUTION

Project: Dane Co.  
Project Location: Verona  
Job #: 9476

Sample: #2 S8 W7  
Test Date: 1/25/95  
Tested By: JMM

| <u>Grain Diameter (mm)</u> | <u>% Finer</u> |
|----------------------------|----------------|
| 2.000                      | 99.0           |
| 0.840                      | 97.2           |
| 0.420                      | 89.8           |
| 0.150                      | 88.2           |
| 0.075                      | 88.1           |
| 0.030                      | 68.0           |
| 0.020                      | 55.7           |
| 0.012                      | 44.6           |
| 0.009                      | 38.2           |
| 0.006                      | 32.6           |
| 0.003                      | 29.4           |
| 0.001                      | 21.7           |

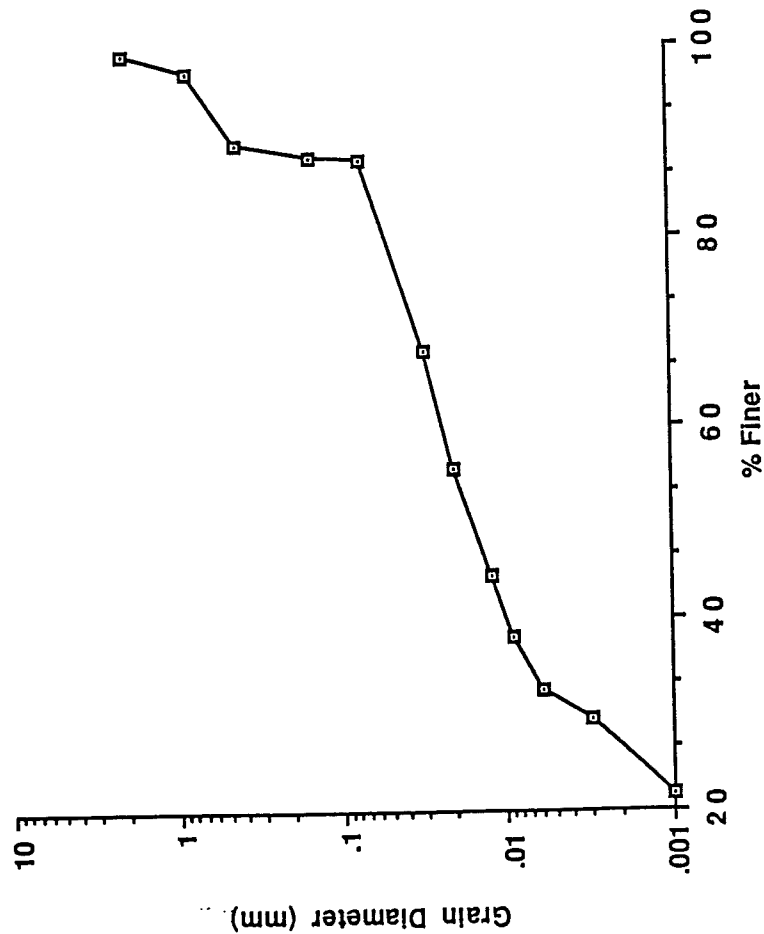




TABLE 2 PROCTOR, PERMEABILITY  
DATA SUMMARY

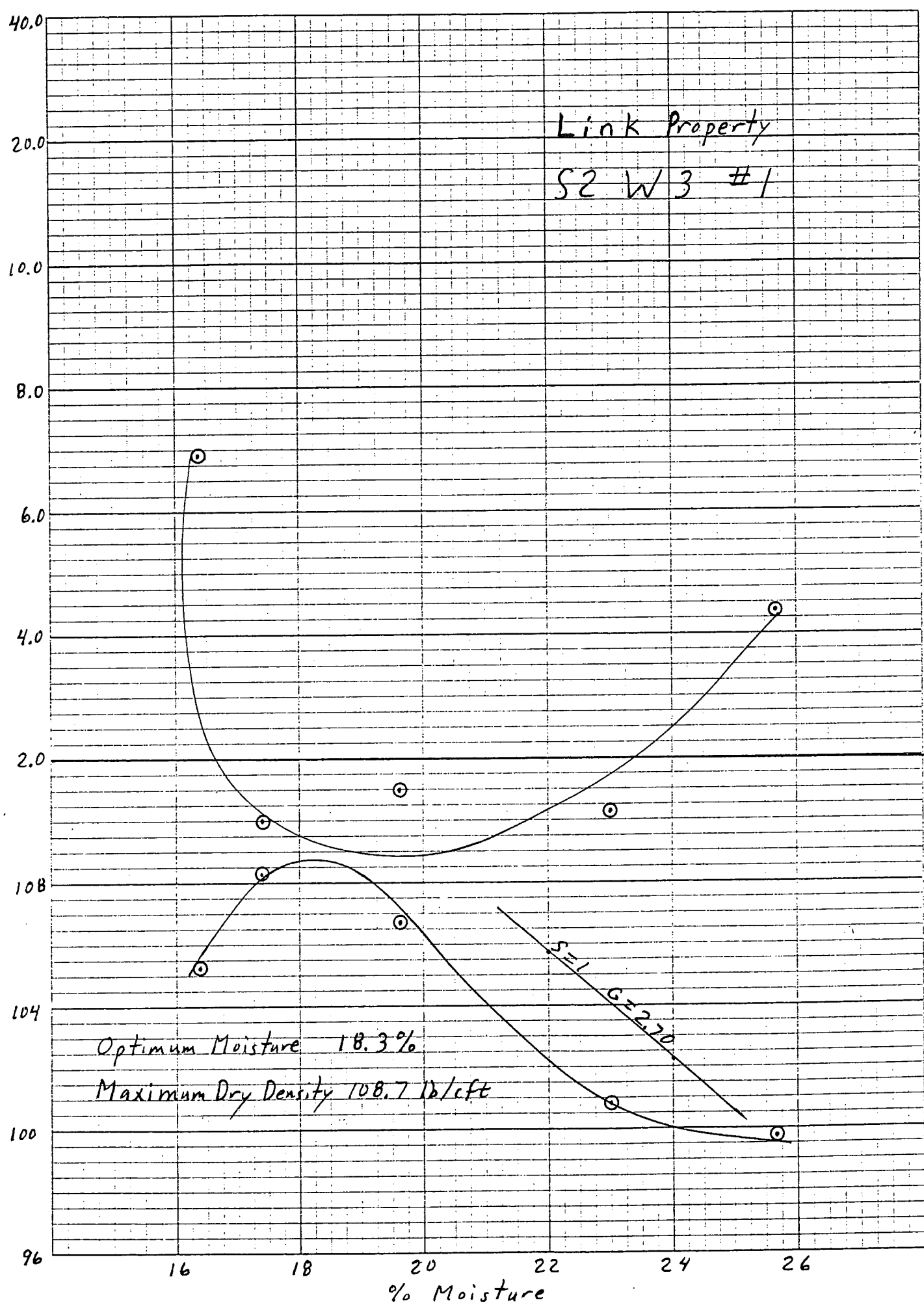
| <u>% Moisture</u> | <u>Dry Density (lb/cft)</u> | <u>Permeability (cm/sec)</u> |
|-------------------|-----------------------------|------------------------------|
| S2 W3 #1          |                             |                              |
| 16.4              | 105.3                       | $6.9 \times 10^{-8}$         |
| 17.3              | 108.3                       | $1.0 \times 10^{-9}$         |
| 19.6              | 106.6                       | $1.5 \times 10^{-9}$         |
| 23.0              | 100.9                       | $1.1 \times 10^{-9}$         |
| 25.7              | 99.9                        | $4.3 \times 10^{-9}$         |
| S6 W11 #1         |                             |                              |
| 13.0              | 99.8                        | $2.2 \times 10^{-8}$         |
| 16.3              | 104.7                       | $4.7 \times 10^{-9}$         |
| 18.0              | 105.7                       | $2.6 \times 10^{-9}$         |
| 21.2              | 104.7                       | $3.1 \times 10^{-9}$         |
| 24.5              | 96.7                        | $2.2 \times 10^{-9}$         |
| S8 W7 #1          |                             |                              |
| 12.0              | 111.7                       | $1.9 \times 10^{-8}$         |
| 14.2              | 114.9                       | $4.1 \times 10^{-9}$         |
| 16.6              | 112.3                       | $3.3 \times 10^{-9}$         |
| 17.9              | 111.4                       | $3.1 \times 10^{-9}$         |
| 22.6              | 101.2                       | $5.0 \times 10^{-9}$         |



permeability ( $1 \times 10^{-9}$  cm/sec)

Dry Density (lb/cft)

Link Property  
S2 W3 #1





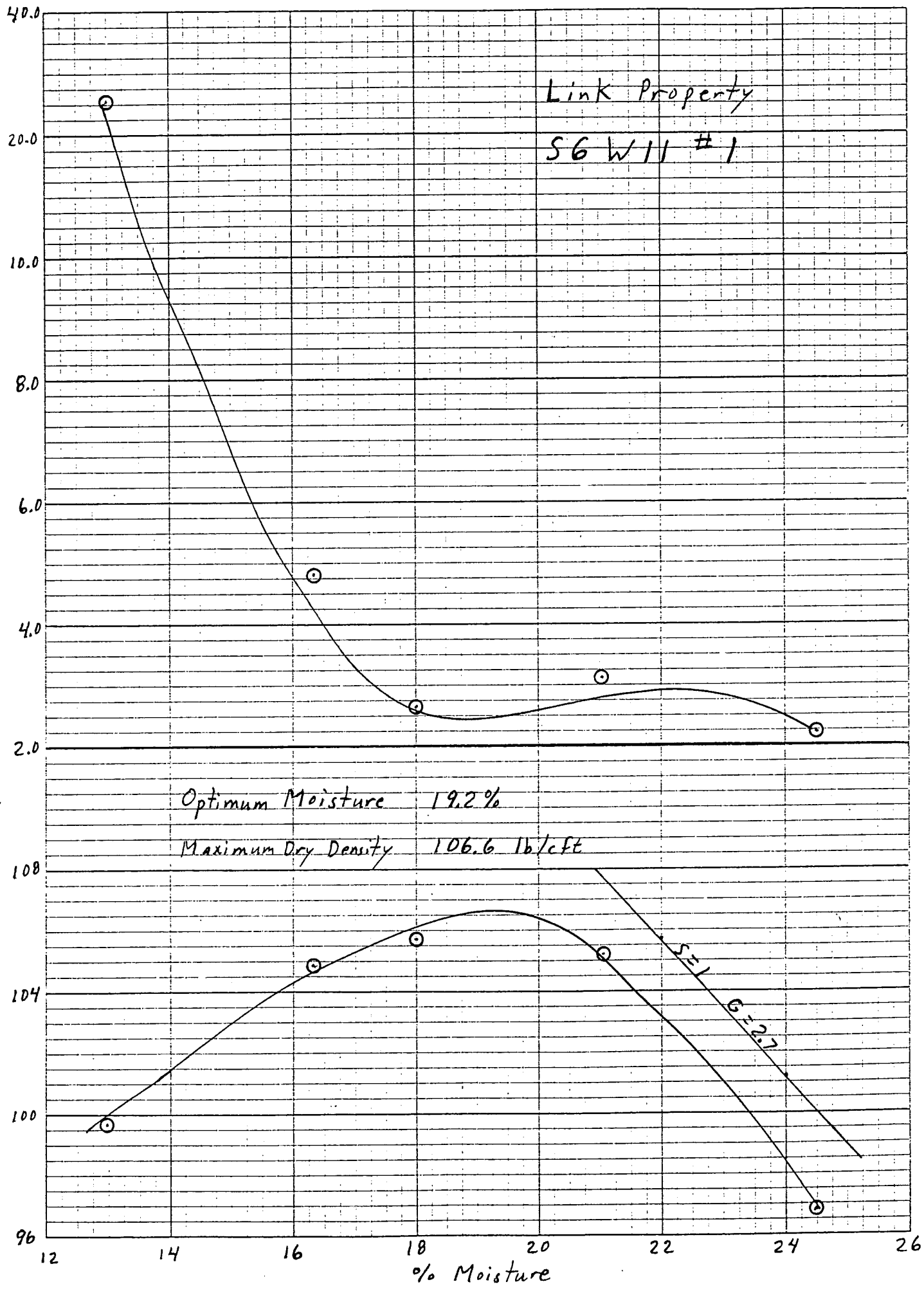
Permeability ( $1 \times 10^{-9}$  cm/sec)

Link Property  
SG W/11 #1

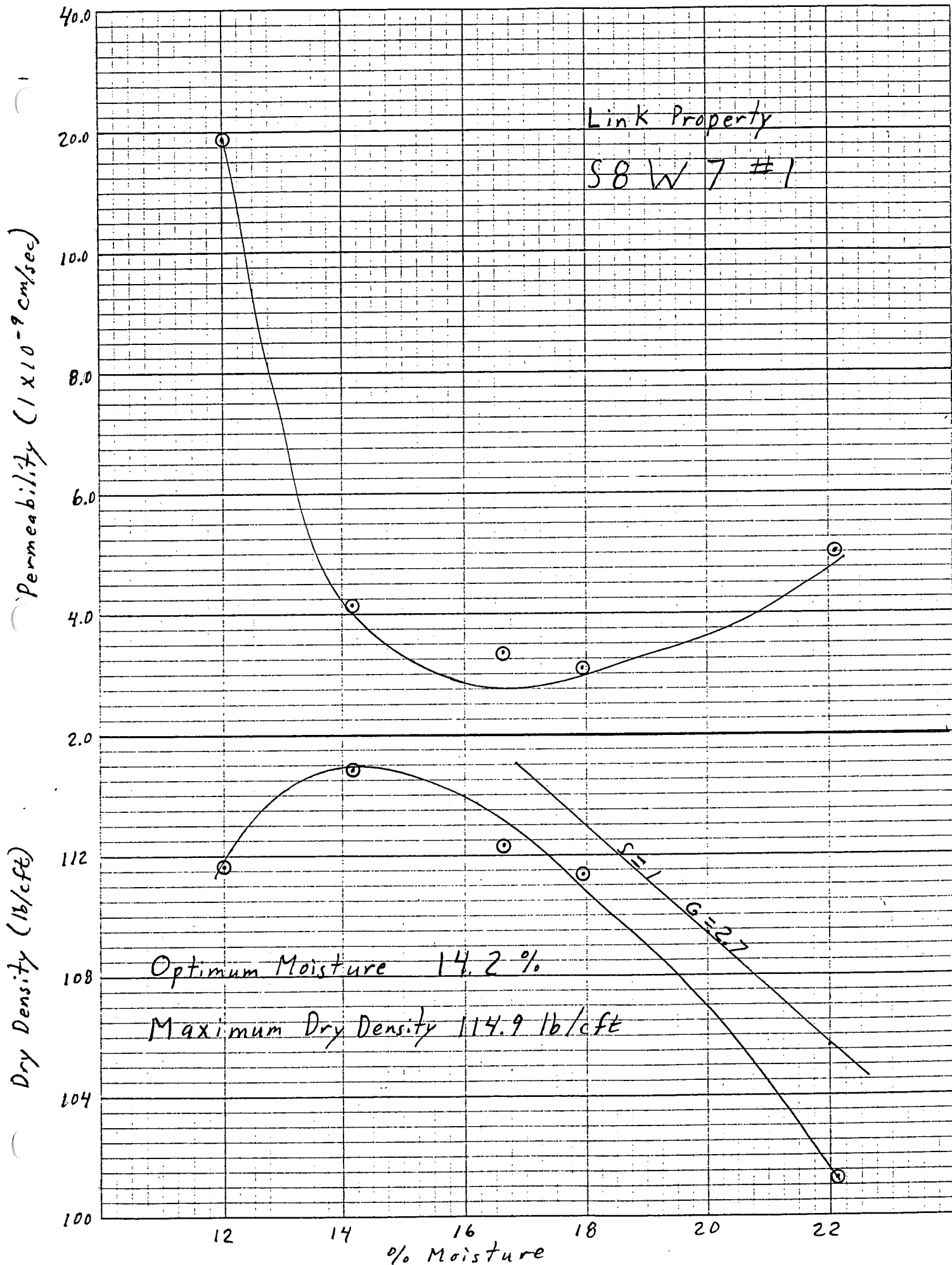
Dry Density (lb/cft)

Optimum Moisture 19.2%  
Maximum Dry Density 106.6 lb/cft

SE1  
G=2.7

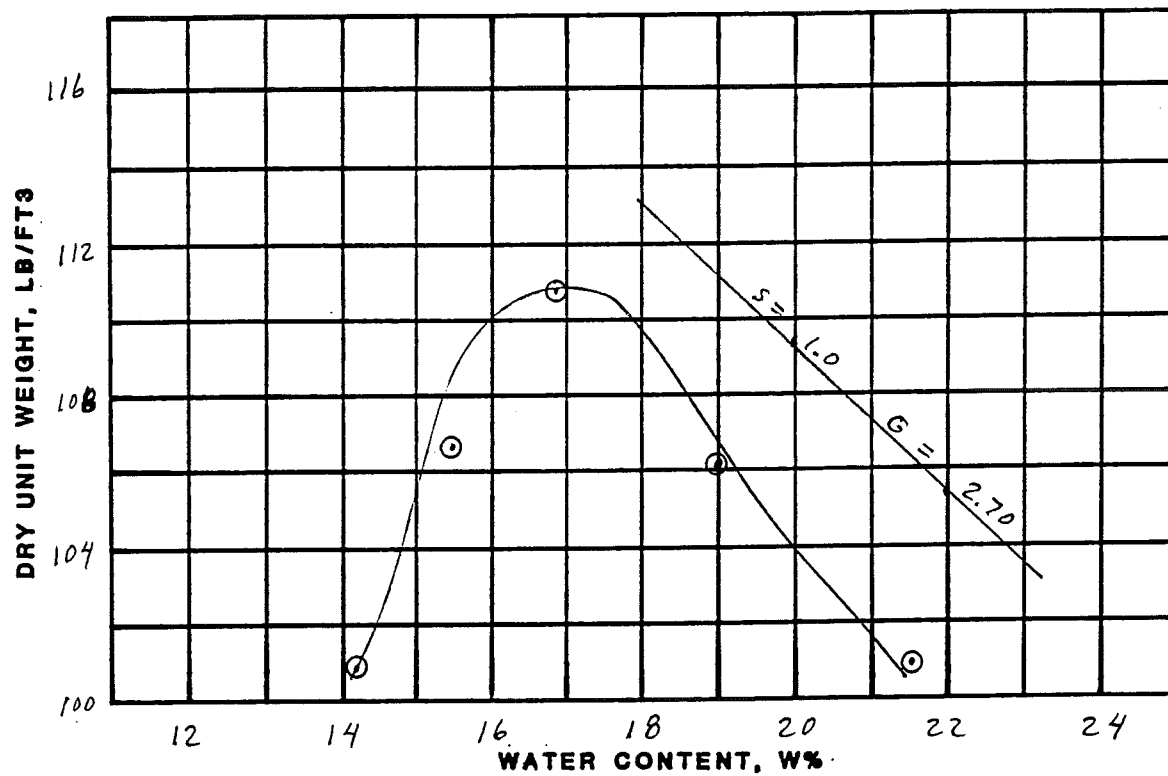








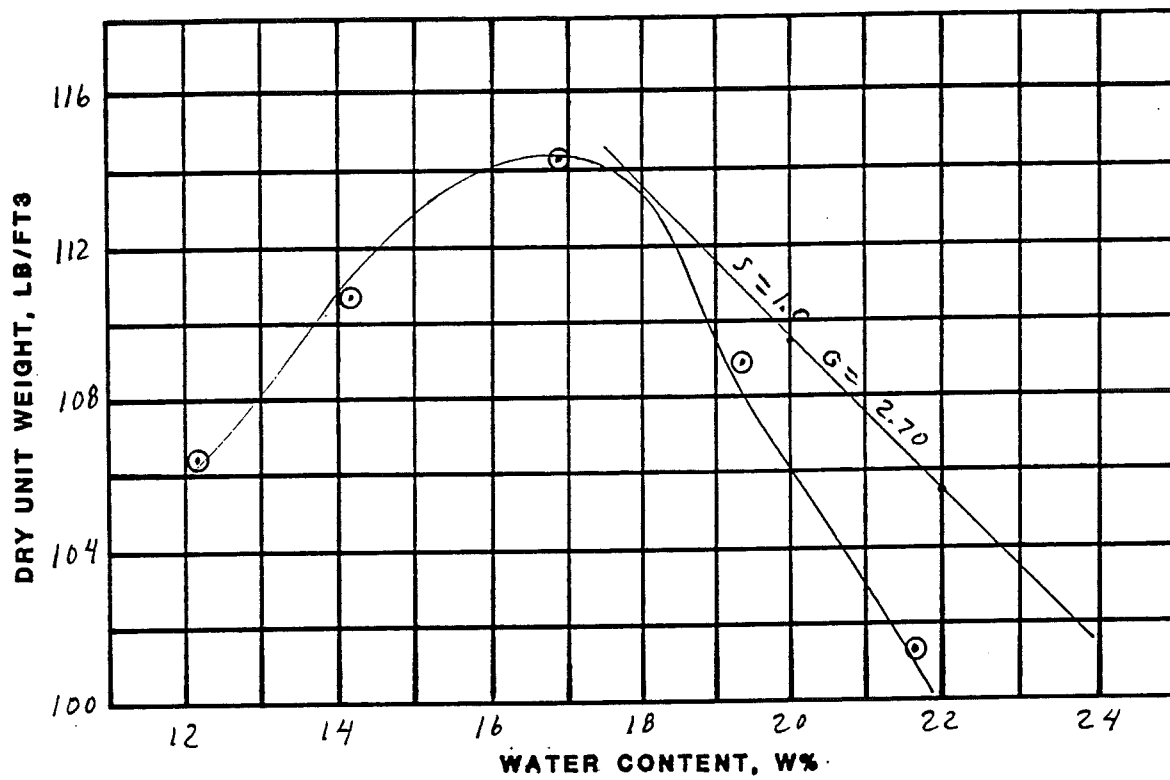
LINK PROPERTY  
MODIFIED PROCTOR  
SO W9



OPTIMUM MOISTURE = 17.0 %  
MAXIMUM DRY UNIT WEIGHT = 110.5 lb/cft



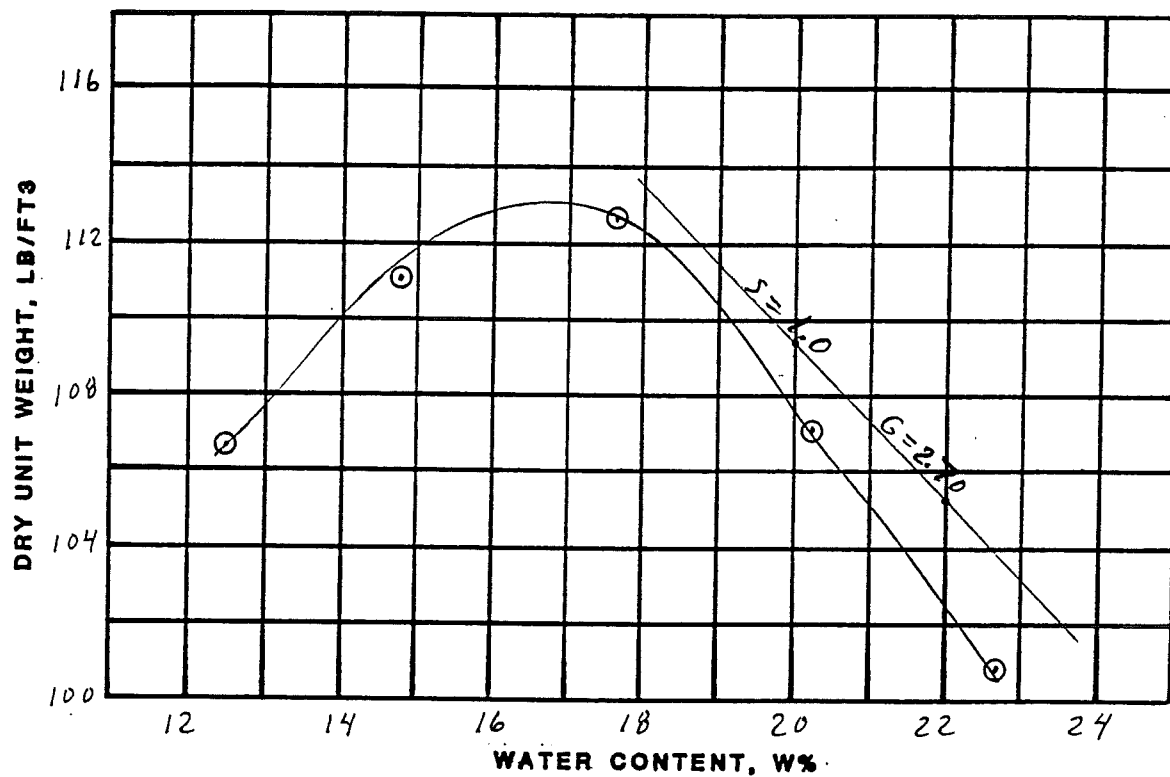
LINK PROPERTY  
MODIFIED PROCTOR  
S2 W11



OPTIMUM MOISTURE = 16.9 %  
MAXIMUM DRY UNIT WEIGHT = 114.2 lb/cft



LINK PROPERTY  
MODIFIED PROCTOR  
S4 W5

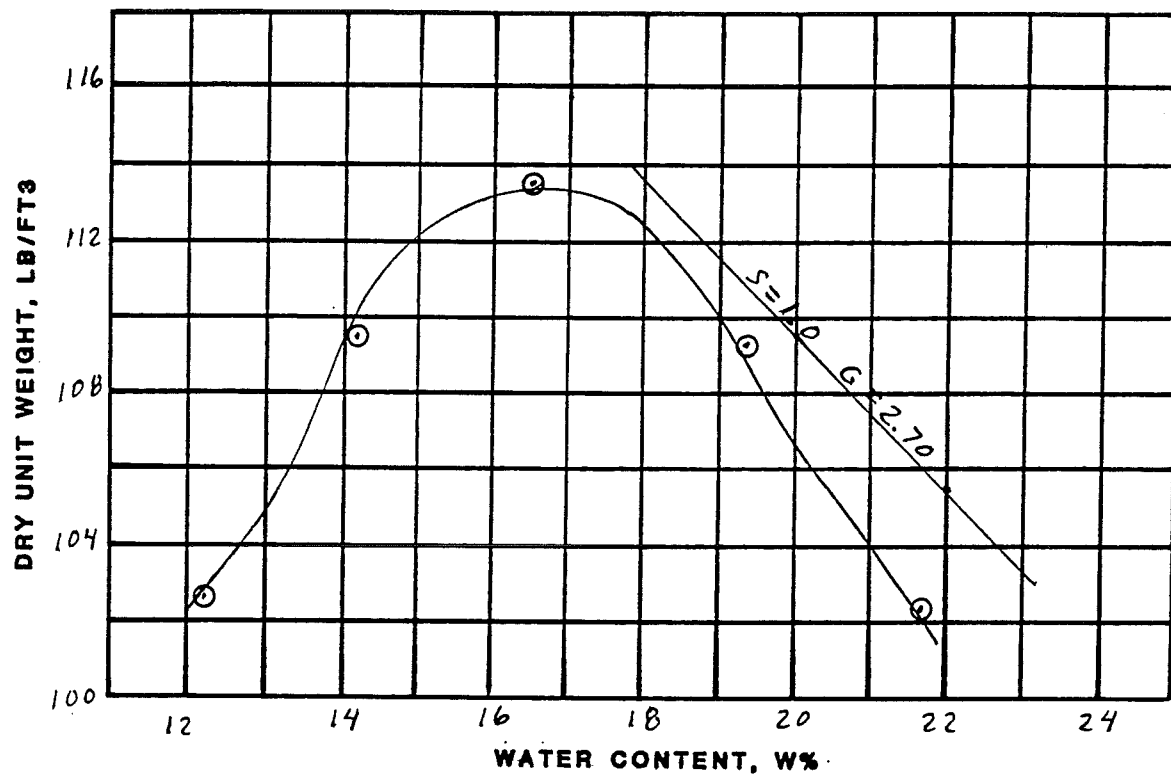


OPTIMUM MOISTURE = 16.8 %

MAXIMUM DRY UNIT WEIGHT = 112.9 lb/cft



LINK PROPERTY  
MODIFIED PROCTOR  
S6 W9



OPTIMUM MOISTURE = 16.5 %

MAXIMUM DRY UNIT WEIGHT = 113.5 lb/cft